

PLAT BOOK

and COMPLETE SURVEY

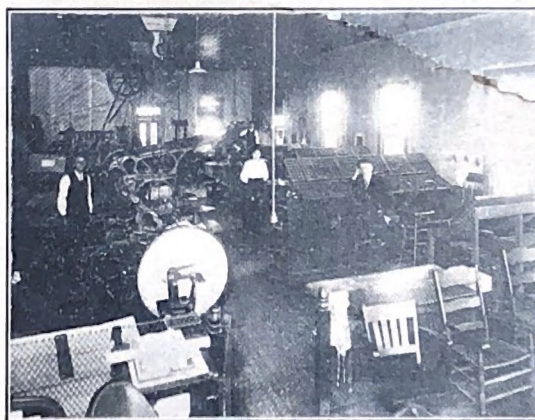
— of —

PERRY COUNTY

ILLINOIS

Containing Plats of all Townships with Owners Names; also Outline Map of the County showing location of Townships, Villages, Roads, Schools, Churches, Railroads, Streams, Etc.

Also Map of Illinois and the United States, Farm Animal Chart with Remedies for Diseases, Etc.



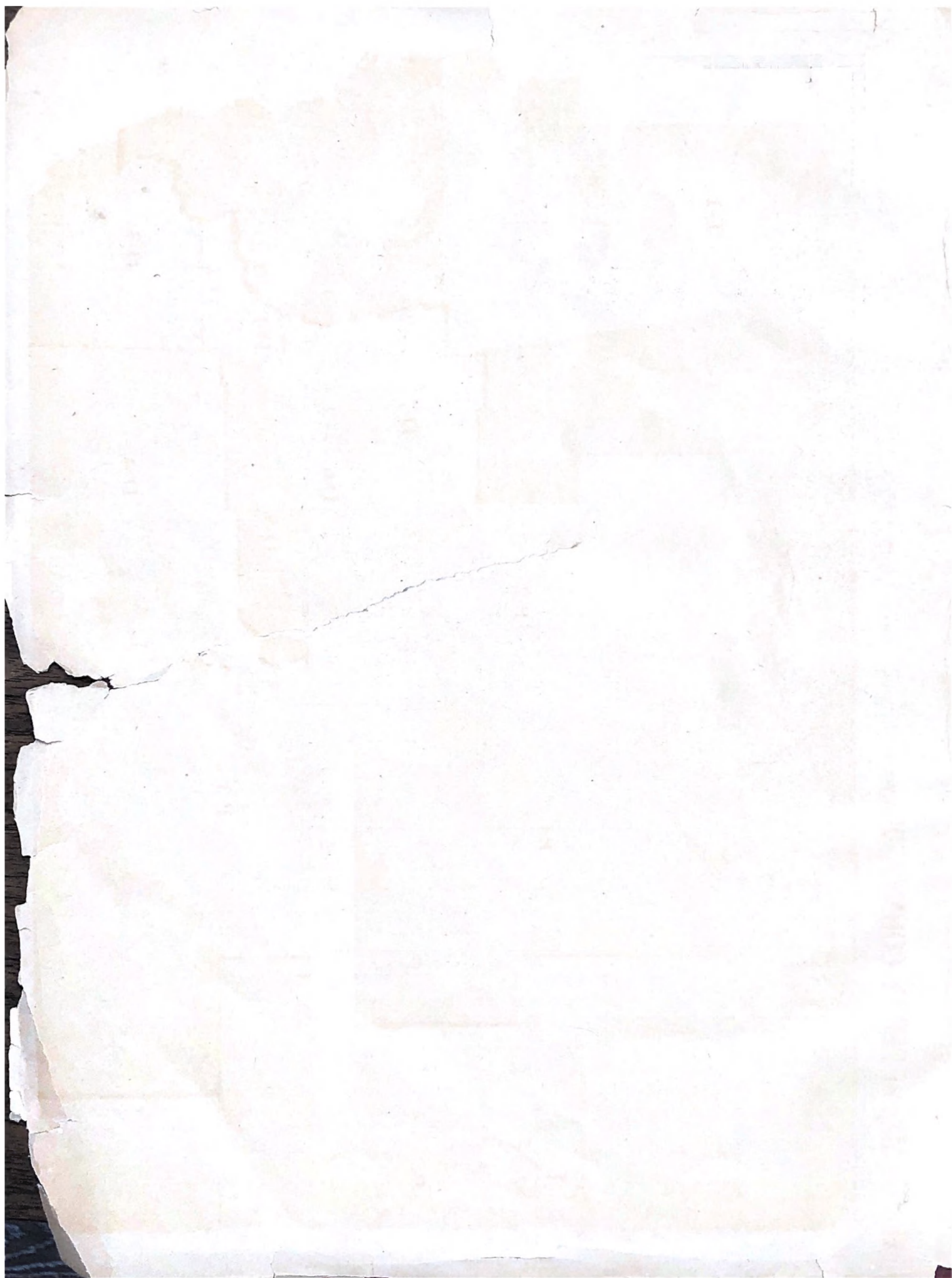
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"All Home Print"
 Pinckneyville, Illinois

Compiled From Latest Data on Record January 1st, 1920

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Scale: 9-16 Inch to 1 Mile

Scale: 9-16 Inch to 1 Mile

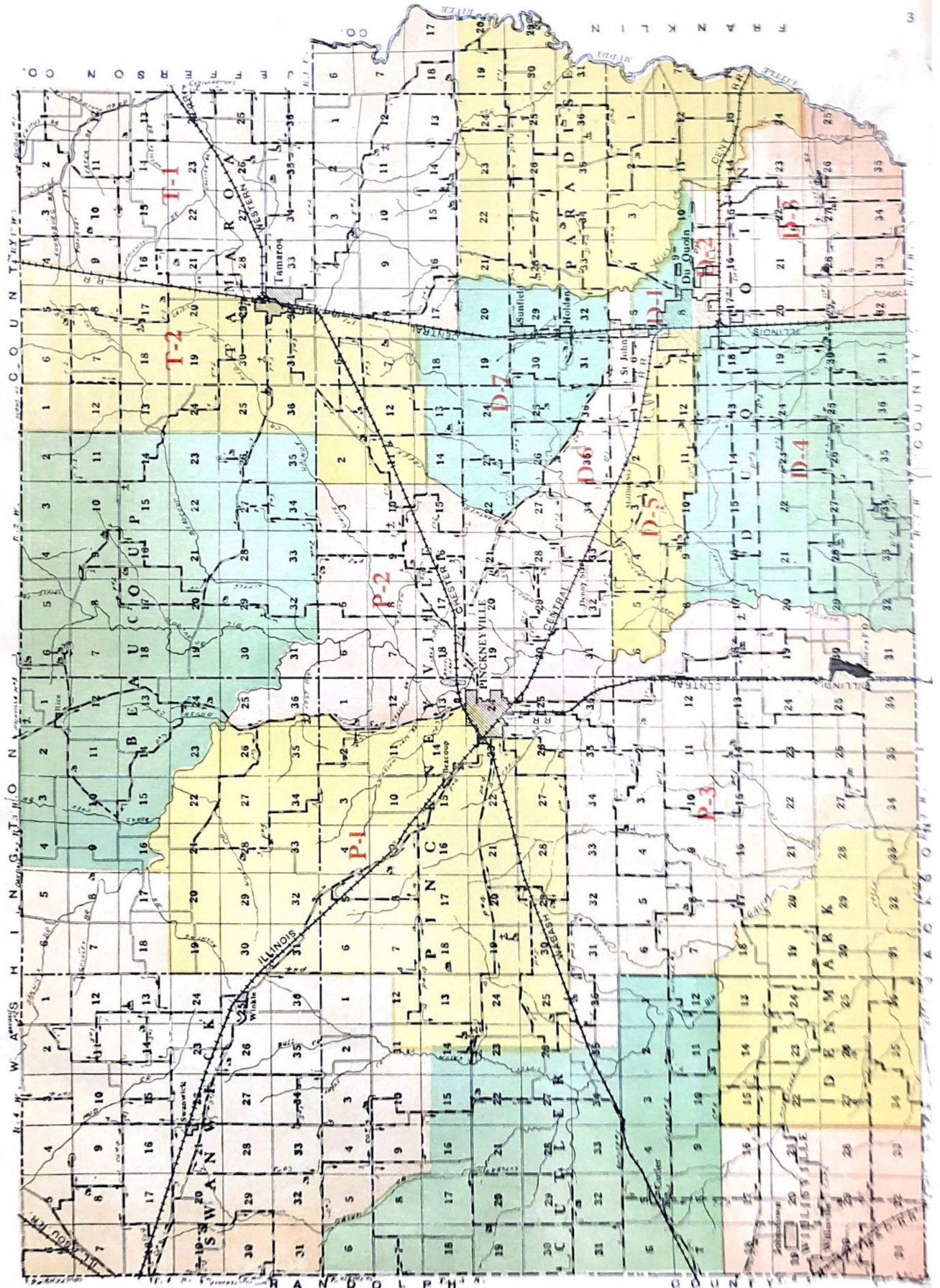
The Voting Districts are shown in Colors

Rural Routes Shown thus:

Churches Shown thus:

Schools Shown thus:

Cemeteries Shown thus:



**You Get the Best Service, Coupled With
"National Safety" at this Bank**

**4%
ON DEPOSITS**



**4%
ON DEPOSITS**

FIRST NATIONAL AT TAMAROA
Ask Your Neighbor

EVERY DOLLAR MADE SAFE

Every dollar deposited in THE FARMERS STATE BANK of TAMAROA, ILLINOIS, is guaranteed by THE AMERICAN GUARANTY CO. of COLUMBUS, OHIO, thus giving to each individual depositor the same protection that is demanded by the U. S. Government, State, County, City, Township or School District of every bank in which Public Funds are placed.

**"SAFETY FIRST TO OUR DEPOSITORS"
IS THE SLOGAN.**

FARMERS STATE BANK

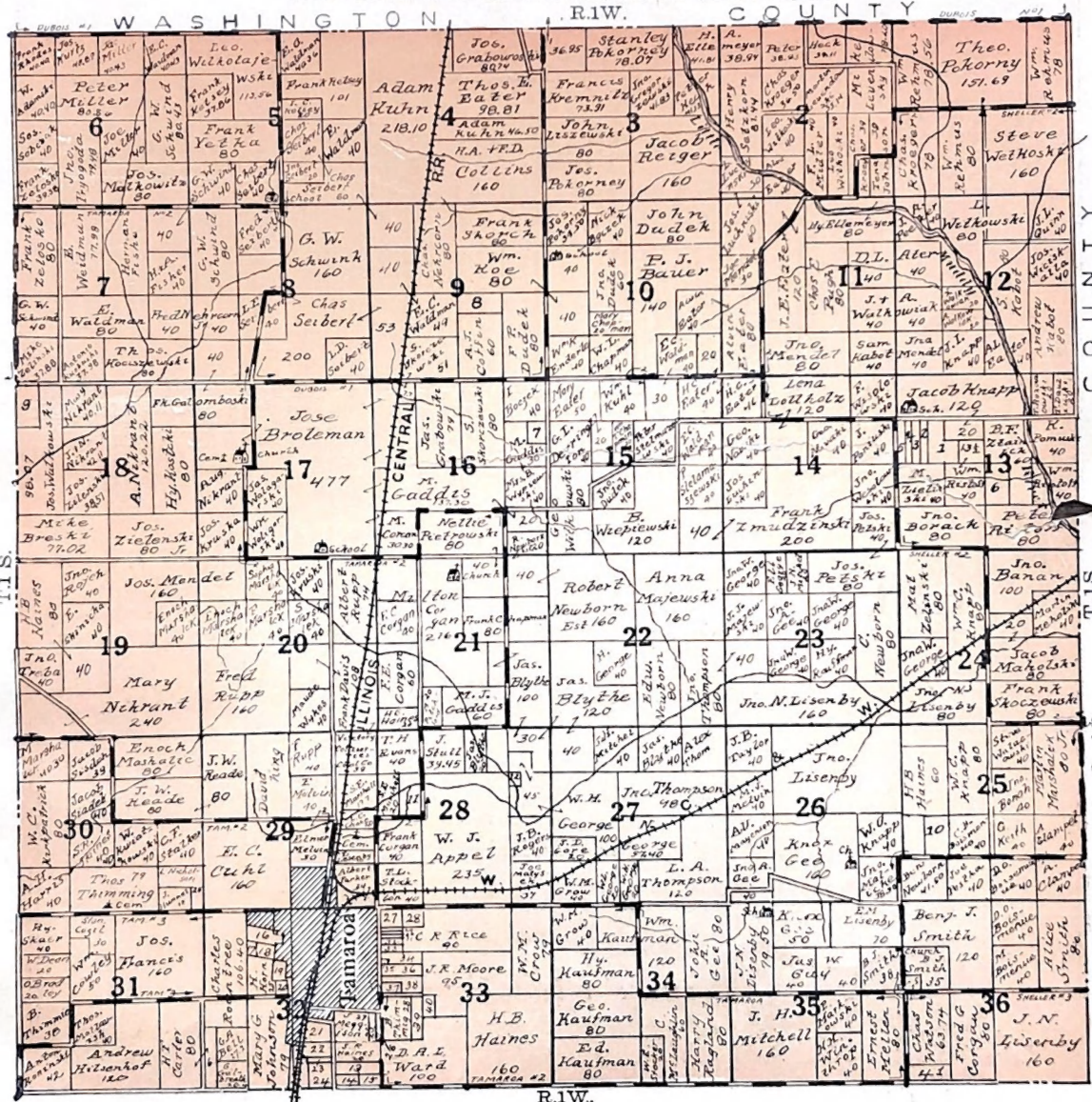
TAMAROA, ILL.

MAP OF Township 4, S. Range 1

West of the 3rd P. M.
PERRY COUNTY, ILLINOIS
Scale: 1½ inches to 1 mile

Improved Roads Shown thus: ————
Rural Routes Shown thus: ————
Where Rural Routes run over Improved Roads, they are denoted by arrows thus: ————

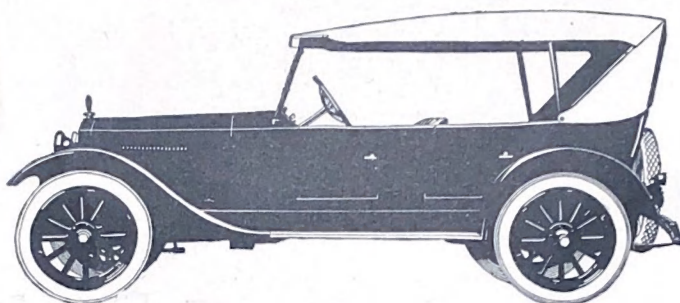
Schools Shown thus: ————
Cemeteries Shown thus: ————
Churches Shown thus: ————



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name	Acres.	Sec.	No.	Name	Acres.	Sec.	No.	Name	Acres.	Sec.	No.	Name	Acres.	Sec.
1.	Jos. Ziainick	20.31	13	11.	Ira Moore	5	28	32.	C. C. Phubrick	3.35	33	32.	C. C. Phubrick	3.35	33
2.	J. M. Taylor	6.66	13	12.	Wm. George	5	28	33.	W. H. Gerge	2.35	33	33.	W. H. Gerge	2.35	33
3.	F. J. Taylor	6.66	13	13.	Harry Morrow	10	32	34.	M. Shepman	9.25	33	34.	M. Shepman	9.25	33
4.	J. M. Taylor	6.66	13	14.	Thos. Thimning	5	32	35.	Geo. Leich	7.5	33	35.	Geo. Leich	7.5	33
5.	Frances Wasolowski	6.66	13	15.	W. D. Melvin	5	32	36.	A. H. Evans	10	33	36.	A. H. Evans	10	33
6.	B. Ziainick	59	13	16.	T. L. Stockton	11.10	32	37.	E. N. Waller	7	33	37.	E. N. Waller	7	33
7.	Joane Winn	19	13	17.	J. N. Lisenby	5	32	38.	Jno. R. Moore	12	33	38.	Jno. R. Moore	12	33
8.	S. Skorewski	20	9	18.	J. Miller	5	32	39.	John Jaross	11	33	39.	John Jaross	11	33
9.	Jos. Prucaski	20.05	18	19.	Tamaron Colliery	5.6	32	40.	F. A. Cox	5	33	40.	F. A. Cox	5	33
10.	J. N. Lisenby	20	23	20.	J. M. Miller	15	32	41.	H. R. Wothrop	10.00	30	41.	H. R. Wothrop	10.00	30
				21.	C. Nalborski	7.8	32								

1920 GRANT SIX



This is an Entirely New Model Grant Six

Featuring Smartness With
Dependability



Represented in Perry County by

HARRY M. DUNN

PINCKNEYVILLE, ILL.

J. H. METTEN

DU QUOIN, ILL.

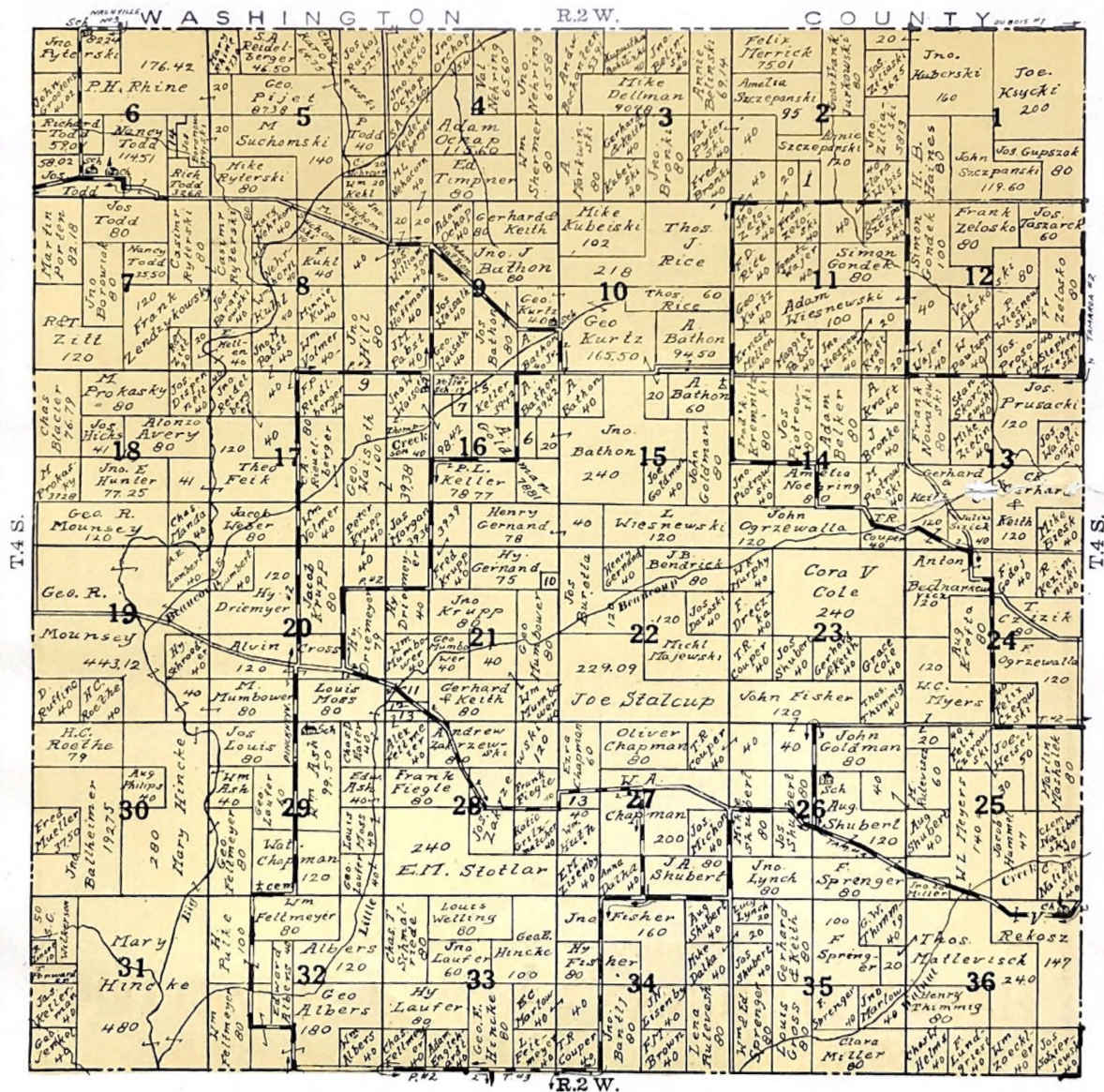
MAP OF

Township 4 S. Range 2

West of the 3rd P. M.
PERRY COUNTY, ILLINOIS

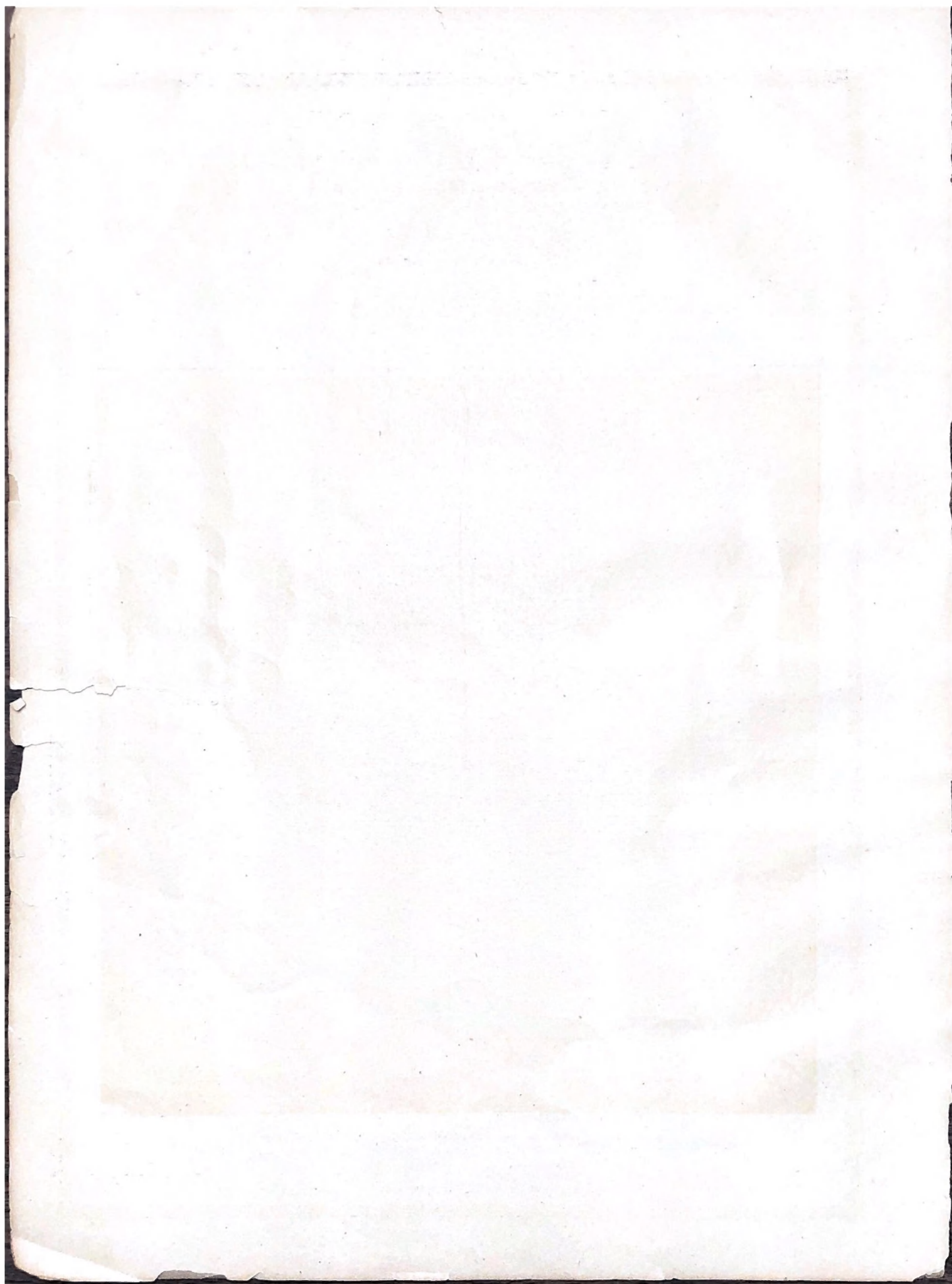
Scale: 1 1/2 inches to 1 mile

Improved Roads Shown thus: Schools Shown thus: Churches Shown thus:
 Rural Routes Shown thus: Cemeteries Shown thus:
 Where Rural Routes run over Improved Roads, they are denoted by arrows thus:



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
Twp. 4 South, Range 2 W.															
1.	Jos. Szczepanski	20	2	5.	Wm. Kuhl	23.24	8	9.	Geo. Vanderheld	20	17	12.	Geo. Mumbower	13	21
2.				6.	P. H. Keller	10.42	10	10.	Jos. Buretta	5	21	13.	Oliver Chapman	20	21
3.				7.	L. Thompson	10	10	11.	Chas. Lator	20	21	14.	Thomas Todd	1.35	6
4.	Casimer Hyterski	20	8	8.	L. Thompson	29.42	10								

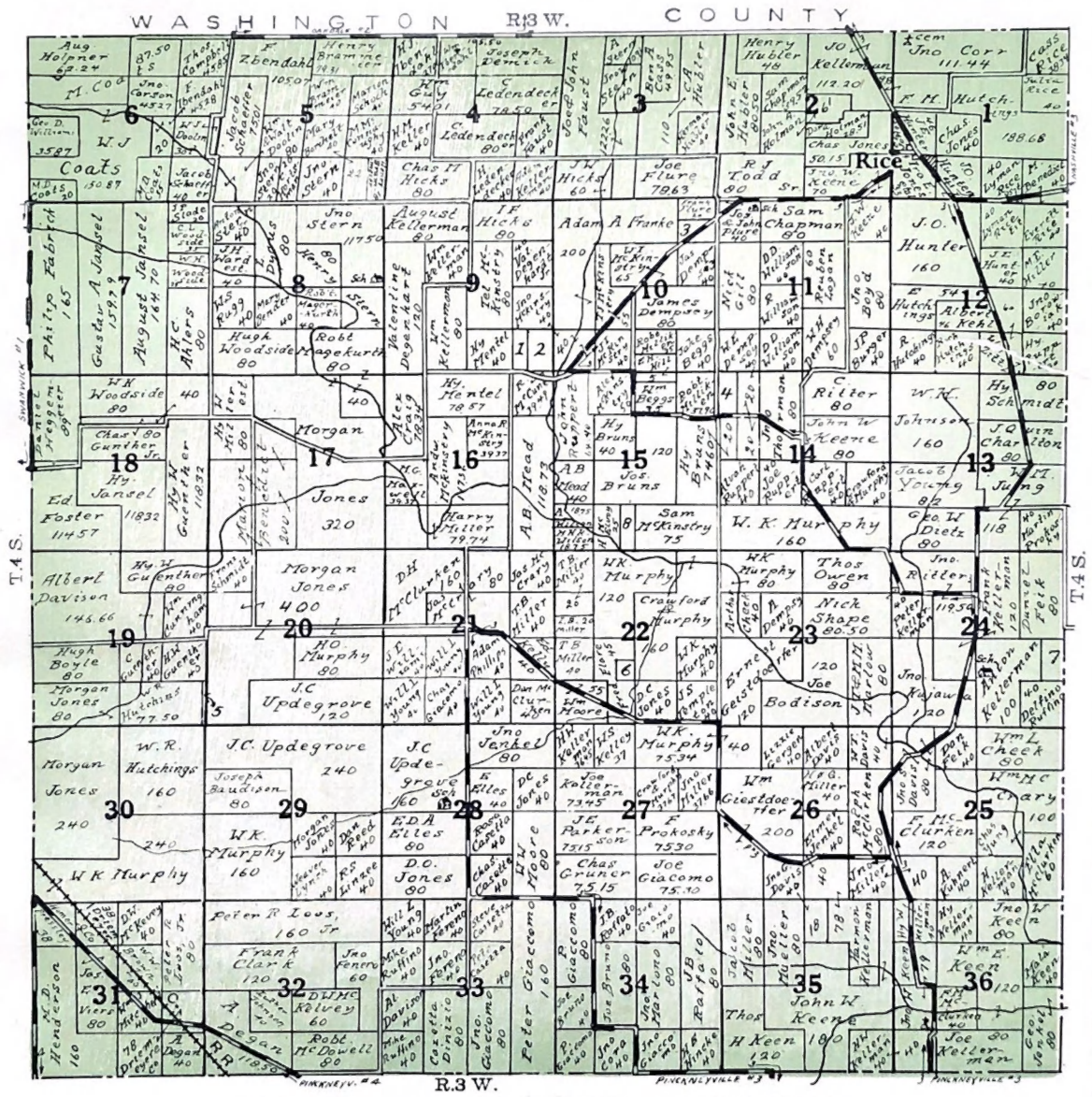


MAP OF Township 4, S. Range 3

West of the 3rd P. M.
PERRY COUNTY, ILLINOIS

Scale: 1 1/2 inches to 1 mile

Improved Roads Shown thus: Schools Shown thus: Churches Shown thus:
 Rural Routes Shown thus: Cemeteries Shown thus:
 Where Rural Routes run over Improved Roads, they are denoted by arrows thus:



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
Twp. 4 South, Range 3 W.							
1.	V. C. Degenhardt	10	9	4.	Robert Milliken	20	14
2.	R. J. McKinstry	30	9	5.	J. H. Ward	2.50	19
3.	James Dempsey	20	10	6.	A. J. Arnett	10	22
				7.	Daniel Ruffino	20	24

R. M. CUPPLES

EVERETT LAMONT

CUPPLES & LAMONT

—DEALERS IN—

General Merchandise



COUNTRY PRODUCE, RAILROAD
AND MINING TIMBER



SWANWICK, ILL.

ROBB

GRAIN & IMPLEMENT CO.

—DEALERS IN—

GRAIN, FLOUR, FEED AND SEED

FARM IMPLEMENTS, TRACTORS
AND AUTOMOBILES

SWANWICK, ILLINOIS

CHESTER KNITTING MILLS

MANUFACTURERS OF

High Grade Seamless Hosiery

EMPLOY YOUNG LADIES

BRANCH MILL NO. 6, PINCKNEYVILLE, ILLINOIS

MAIN OFFICE
ST. LOUIS, MISSOURI

S. H. MORTON & CO.

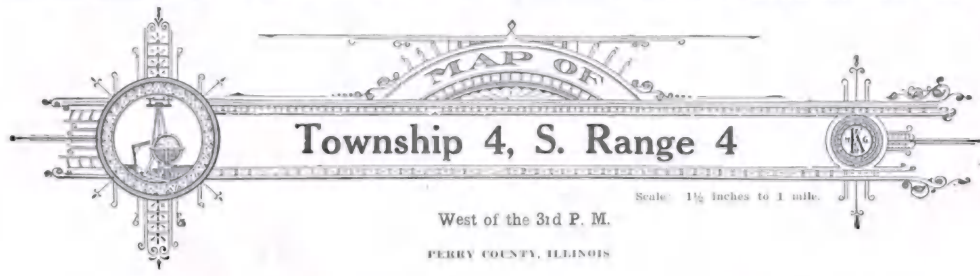
GENERAL LAND DEALERS

Farming, Coal and Timber LANDS

800 Title Guaranty Bldg., 706 Chestnut Street

WE CAN SELL YOUR LANDS

ST. LOUIS, MO.

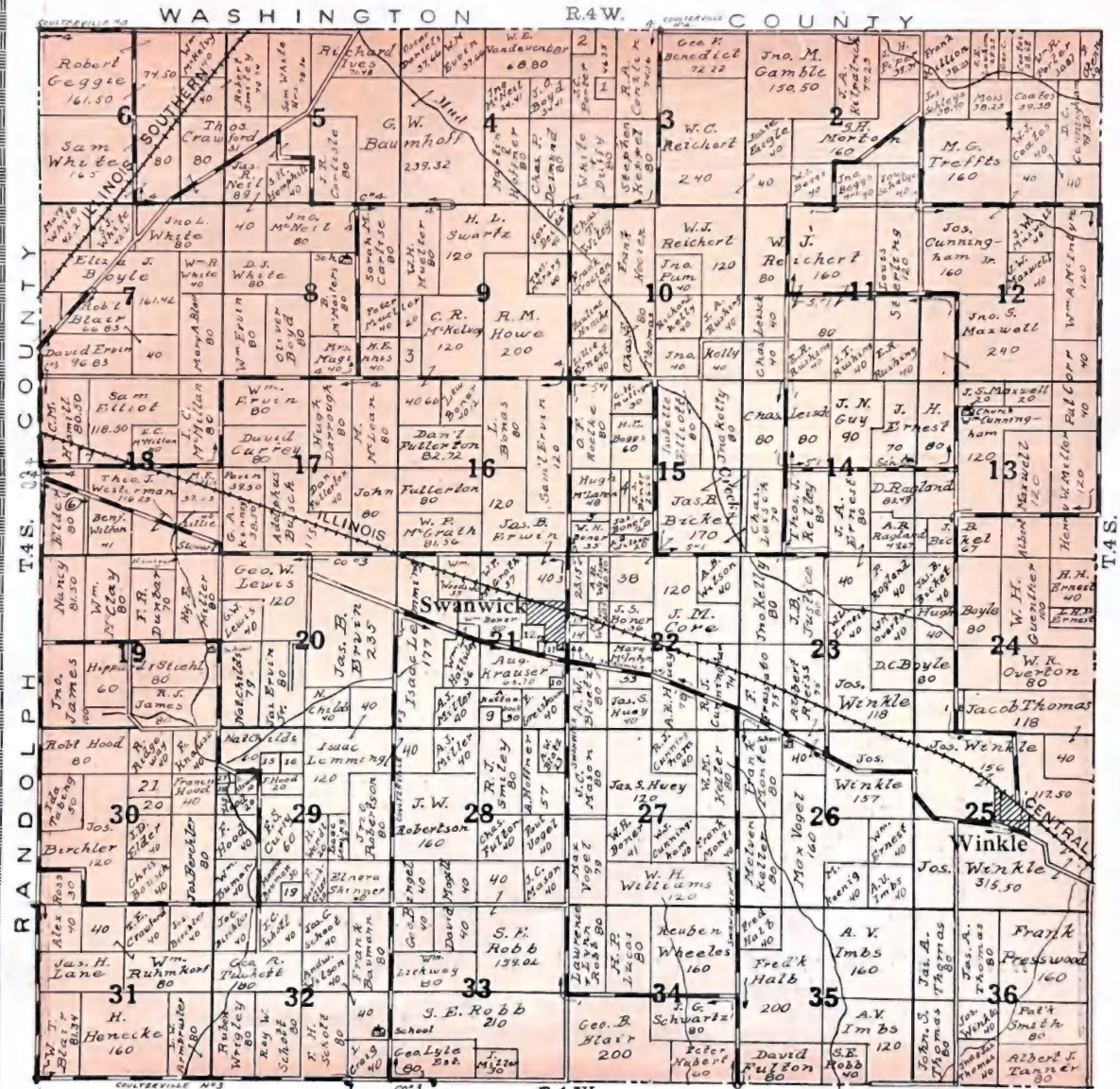


West of the 3rd P. M.

PERRY COUNTY, ILLINOIS

Scale: 1 1/2 inches to 1 mile.

Improved Roads Shown thus: ——— Schools Shown thus: Churches Shown thus:
Rural Routes Shown thus: - - - - - Cemeteries Shown thus:
Where Rural Routes run over Improved Roads, they are denoted by arrows thus:



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	No.	Name.	Acres.	No.	Name.	Acres.	No.	Name.	Acres.
1.	John Intihar	9.27	6.	Hippard & Stiehl	2	12.	J. W. McMullan	12.55	21.	Dane Fullerton	5
2.	J. C. Edwards	9.24	7.	Chicago Culterville Coal C.	2	13.	J. C. Mason	4.2	22.	Frank Bowman	10
3.	John Blanton	30	8.	M. Klingenberg	2	14.	Matt. Robb	1.3	23.	Matt. Weidner	16
4.	W. H. R. Wilson	5.33	9.	G. F. Broadbent	40	15.	Thos. Westerman	10	24.	Mike Kiskin	24
5.	John Buner	5	10.	H. Megill	3	16.	Frank Curry	10	25.	Lora M. Allen	17
			11.	J. C. Mason	4.05	17.	H. Jones	5			

WILDY & NEISING

CLOTHIERS

Hart Schaffner & Marx

Suits and Coats

Stetson Hats
Walk-Over Shoes

TRUNKS AND TRAVELING BAGS

PINCKNEYVILLE, ILLINOIS

Watches

Cut Glass

Clocks

Ivory Toilet Pieces

Silverware

Umbrellas

CHARLES GEUMALLEY

PINCKNEYVILLE, ILLINOIS

P. H. WALKER

Hardware, Stoves, Ranges

Washing Machines

Wringers, Lanterns

Aluminum Ware

Granite Ware

Mowers, Binders and Rakes

WHAT YOU BUY FROM US IS
GOOD

Phone 81 PINCKNEYVILLE, ILLINOIS

RITCHEY COAL COMPANY

MINERS AND SHIPPERS
OF

BEAUCOUP COAL

PINCKNEYVILLE, ILL.

W. S. WILSON, President

W. T. RITCHEY, Vice-President.

S. S. RITCHEY, Secretary-Treas.

Township 5 S. Range 1

East and 1 West of the 3rd P. M.

FERRY COUNTY, ILLINOIS

Scale: 1/4 inch to 1 mile

Improved Roads Shown thus: ———

Rural Routes Shown thus: - - - -

Where Rural Routes run over Improved Roads, they are denoted by arrows thus: ———→

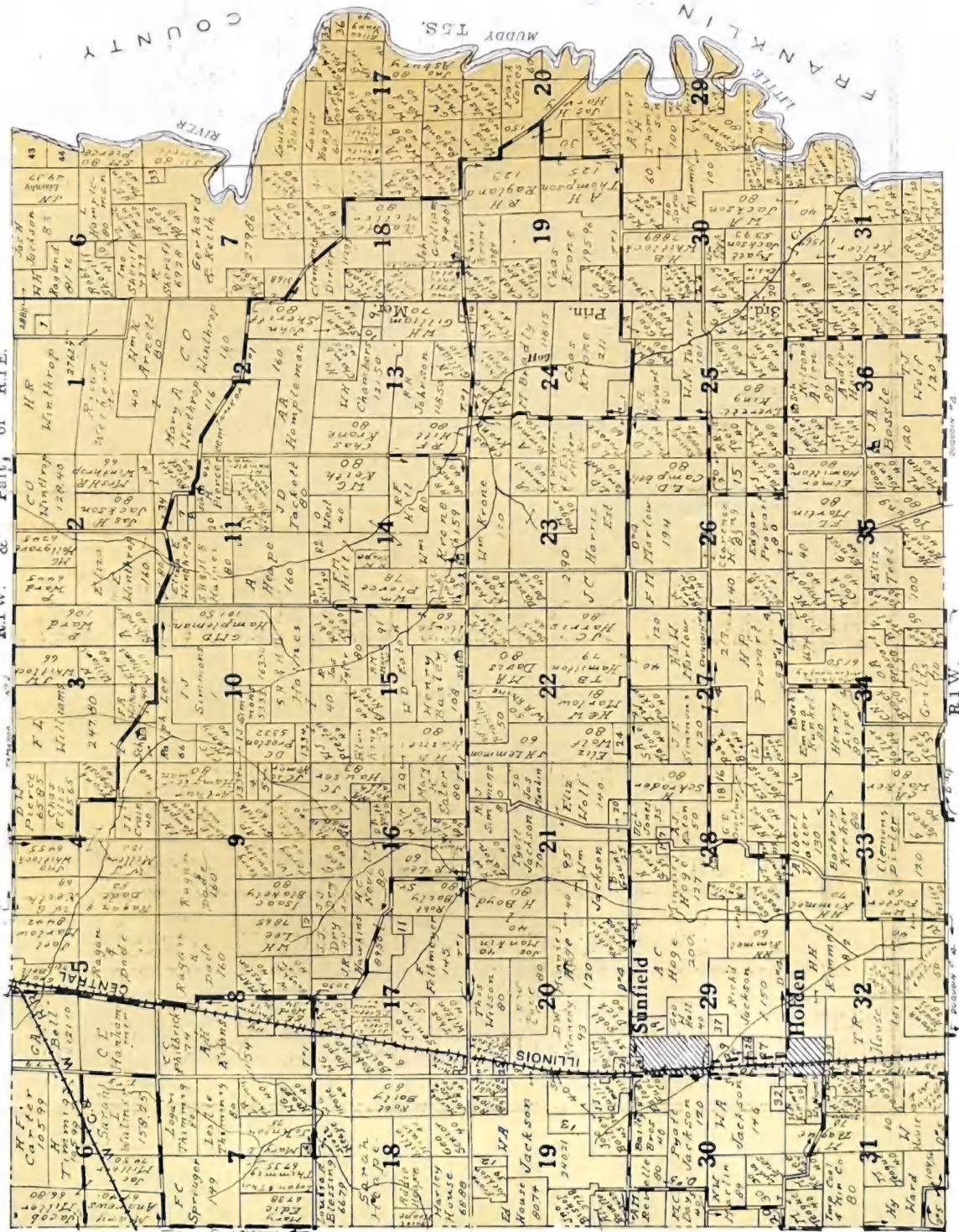
Schools Shown thus: A

Cemeteries Shown thus: +

Churches Shown thus: M

List of Small Property Owners in this Township Shown on Map by Numbers

No.	Name	Area.	Sec.
1	W. H. Pierce	5	33
2	W. H. Pierce	5	33
3	W. H. Pierce	5	33
4	W. H. Pierce	5	33
5	W. H. Pierce	5	33
6	W. H. Pierce	5	33
7	W. H. Pierce	5	33
8	W. H. Pierce	5	33
9	W. H. Pierce	5	33
10	W. H. Pierce	5	33
11	W. H. Pierce	5	33
12	W. H. Pierce	5	33
13	W. H. Pierce	5	33
14	W. H. Pierce	5	33
15	W. H. Pierce	5	33
16	W. H. Pierce	5	33
17	W. H. Pierce	5	33
18	W. H. Pierce	5	33
19	W. H. Pierce	5	33
20	W. H. Pierce	5	33
21	W. H. Pierce	5	33
22	W. H. Pierce	5	33
23	W. H. Pierce	5	33
24	W. H. Pierce	5	33
25	W. H. Pierce	5	33
26	W. H. Pierce	5	33
27	W. H. Pierce	5	33
28	W. H. Pierce	5	33
29	W. H. Pierce	5	33
30	W. H. Pierce	5	33
31	W. H. Pierce	5	33
32	W. H. Pierce	5	33
33	W. H. Pierce	5	33
34	W. H. Pierce	5	33
35	W. H. Pierce	5	33
36	W. H. Pierce	5	33
37	W. H. Pierce	5	33
38	W. H. Pierce	5	33
39	W. H. Pierce	5	33
40	W. H. Pierce	5	33
41	W. H. Pierce	5	33
42	W. H. Pierce	5	33



H. R. SCHULZE

O. H. SCHULZE

H. R. SCHULZE & SON

DEALERS IN ALL KINDS OF BUILDING MATERIAL

Lumber, Common and Fire Brick, Drain Tile, Building Tile, Cement, Lime,
Chatt, Sand, Barb Wire, Nails, Roofing, Paints

ARE YOU RELATED TO THE MAN IN ARKANSAS?

You know, the Arkansas Traveller found a settler whose roof leaked a stream. He said he couldn't fix it while it rained, and when it didn't rain it didn't need fixing. If you have a roof that needs fixing, let's get at it before the winter storms. We have a complete line of **Good Roofing Materials**.

WE ARE BARN DOCTORS

A sick barn, like a sick horse, is a poor investment. Don't let your buildings run down—it doesn't pay. If you will tell us just what symptoms of decay your barn has, we can tell you mighty quick what should be done, and we can furnish you with the material for fixing it. WE have a plan book for you to mull over if you want to build a new barn.

ADD TEN ACRES TO YOUR FARM

Mr. Farmer how much corn did that wet field of yours produce this season? Supposing you could double that yield next year. Put in some drain tile, we have a nice line of them.

EVERY CUSTOMER OUR BEST CUSTOMER

We "play favorites" to all. Here the small and the large buyer are treated alike as princely patrons. Here, every order is handled as though our entire success depended on giving every customer 100 per cent satisfaction.

Pick up the receiver and call No. 52. We're at the other end—Listening—for your welcome ringing. We will be glad to furnish you anything from 3 brick to a car load of lumber.

Pinckneyville

TRY US

Illinois

PINCKNEYVILLE

CHICAGO

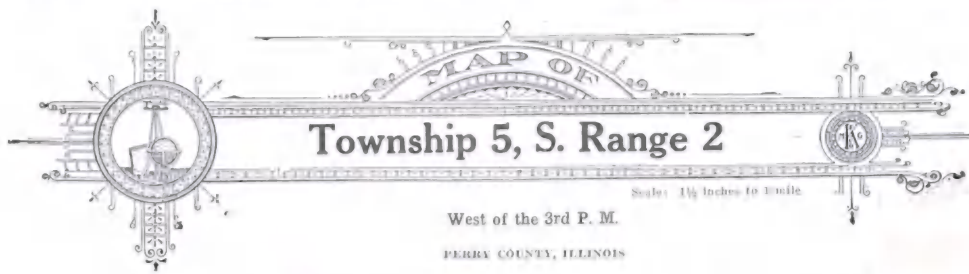
Illinois Sixth Vein Coal Co.

PINCKNEYVILLE, ILLINOIS

Operators and Shippers

Mines Bought Outright, Leased
or Handled on Contract Basis

"Servants to His Majesty, King Coal"



Improved Roads Shown thus: ——— Schools Shown thus: Churches Shown thus:
 Rural Routes Shown thus: ——— Cemeteries Shown thus:
 Where Rural Routes run over Improved Roads, they are denoted by arrows thus:



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
Twp. 5 South, Range 2 W.															
1.	Leo Holden	29	2	5.	W. T. Martin	10	19	11.	G. W. Huggins	24	32	17.	G. W. Huggins	11	31
2.	Cora A. Greer	1.75	3	6.	Jacob Bartle	10	19	12.	F. McDonald	24	32	18.	Anton Hensler	30	29
3.	Mary Held	20	19	7.	Minerva Fritzell	2	13	13.	Iron Coal Co.	20	34	19.	Mary Hensler	20	24
4.	Mary Henrichs	18.50	19	8.	W. T. Ritcher	13	20	14.	Iron Coal Co.	22.5	25	20.	J. N. Whitaker	25.75	33
				9.	A. E. Lee	18	21	15.	Booke Dry	5	31				
				10.	Geo. Bird	3.5	32	16.	J. Morganhaier	4	31				

MURPHY-WALL STATE BANK & TRUST COMPANY

PINCKNEYVILLE, ILLINOIS

Capital \$100,000.00

Surplus and Undivided Profits \$30,000.00

JOS. CRAWFORD,
President.

J. G. TAFFEE,
Vice President

CHAS. J. BISCHOF,
Cashier

C. H. DINTELMAN,
Asst. Cashier

Safe and Sane Methods have marked the business operations of this Bank since it opened for business in the year 1874.

Conservatism consistent with the rules of Sound Banking has ever been the Policy of our Bank.

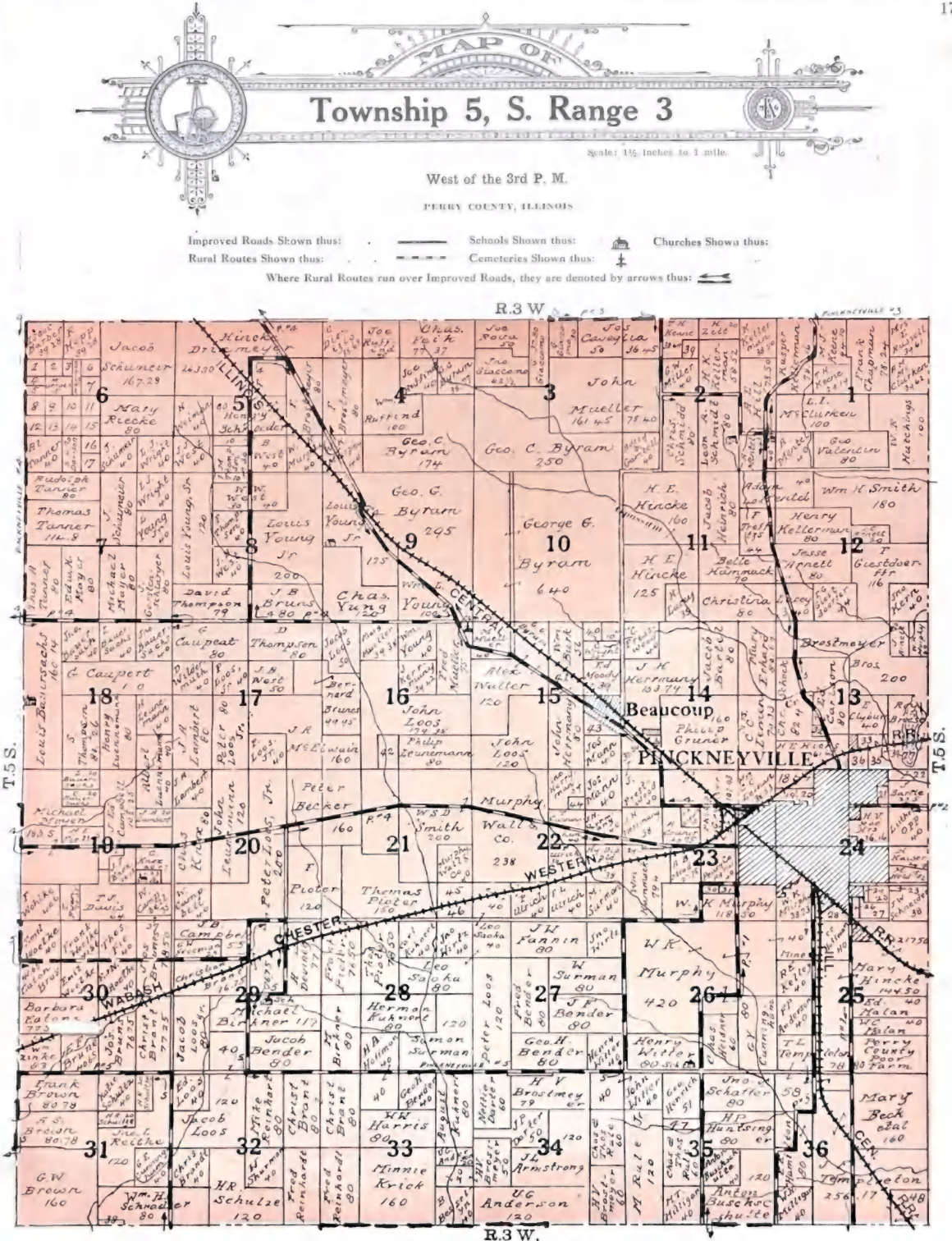
The Welfare of Our Depositors is our first consideration in making investments for our Bank.

This Bank is under State Supervision, and must conduct its business along safe and sound lines in order to comply with the Banking Laws of the State of Illinois.

Our Bank is protected against loss through burglary by Insurance, Burglar Proof Safes kept in a Burglar Proof, Steel Lined Vault which is also Fire Proof. In addition, the Bank is equipped with an Electric Burglar Alarm Bank Protection System.

You are welcome at this Bank any time you may call. We want your business. All accounts will receive our careful attention regardless of size. Interest paid on time deposits and in our Savings Department.

The Bank With Many Years of Business Success



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
Twp. 5 South, Range 3 West.															
1.	Rosa Gayle	10	6	12.	C. F. Quick	10	6	28.	Jas. Comoso	4.78	24	38.	Wm. Zinke	1.20	31
2.	N. F. Gruver	10	6	13.	H. Van Gordon	10	6	29.	S. H. Caron	11.53	24	39.	E. H. Kellerman	10	2
3.	J. O. Haines	5	6	14.	P. L. Filder	10	6	30.	Mary Sullivan	14.75	24	40.	Narcissa Jones	10	15
4.	L. Wright	5	6	15.	E. & N. Thibault	10	6	31.	T. W. Dunn	2.68	23	41.	W. W. Burk	20	15
5.	S. H. Andrews	5	6	16.	T. & S. Thibault	10	6	32.	Wm. Quillman	10	23	42.	John Herrmann	20	10
6.	W. H. Stull	10	6	17.	M. Braehl	10	6	33.	Thos. Turner	3	23	43.	Dunk Bros. C. Co.	8	15
7.	O. Scott	10	6	18.	Hincke Bros.	7.5	24	34.	A. O. Hartley	2.95	13	44.	Thos. W. Dunn	20	22
8.	R. & B. Miller	10	6	19.	John Boyd	7.5	24	35.	Ed. Carlson	11	13	45.	John Wirtz	20	21
9.	Joe Honock	10	6	20.	K. Lambert	7.74	24	36.	Pinckneyville Property	10	13	46.	Fred Strauch	8	21
10.	H. Van Gordon	10	6	21.	E. Bartle	4.4	24	37.	W. S. H. Smith	10	13	47.	F. R. Hiller	8	35
11.	R. S. Miller	10	6	22.	Jacob Young	12.5	24	38.	Dewitt Hale	10	13	48.	Geo. Schorn	38.50	30
				23.	M. Gergens	10	24	39.	Jos. Bruns	5	19				

H. C. COLE, President

C. B. COLE, Vice President

E. P. BRONSON, Treas. & Manager

H. C. COLE MILLING COMPANY

ESTABLISHED 1839

INCORPORATED 1888

Daily Capacity 1200 Barrels

Manufacturers of Flour from Soft Winter Wheat

Makers of the celebrated brands of Flour

OMEGA, DELTA, F. F. F. C. and in Self-rising Flour WHITE RING

Grain Elevators Located at CUTLER, ILL., and WELGA, ILL.

Where Highest Prices are Paid for Wheat and Stocks of Flour

Middlings and Bran are Carried at All Times

NELSON B. LAYMAN

Attorney at Law

DU QUOIN, ILLINOIS

**General Practice of Law
in All State and Federal Courts**

DU QUOIN EVENING CALL

DU QUOIN, ILLINOIS

The only daily newspaper in Perry, Franklin, Washington and Randolph Counties, should be read by all the leading citizens of these counties. Every Evening except Sunday.

\$4.50

IN PERRY COUNTY

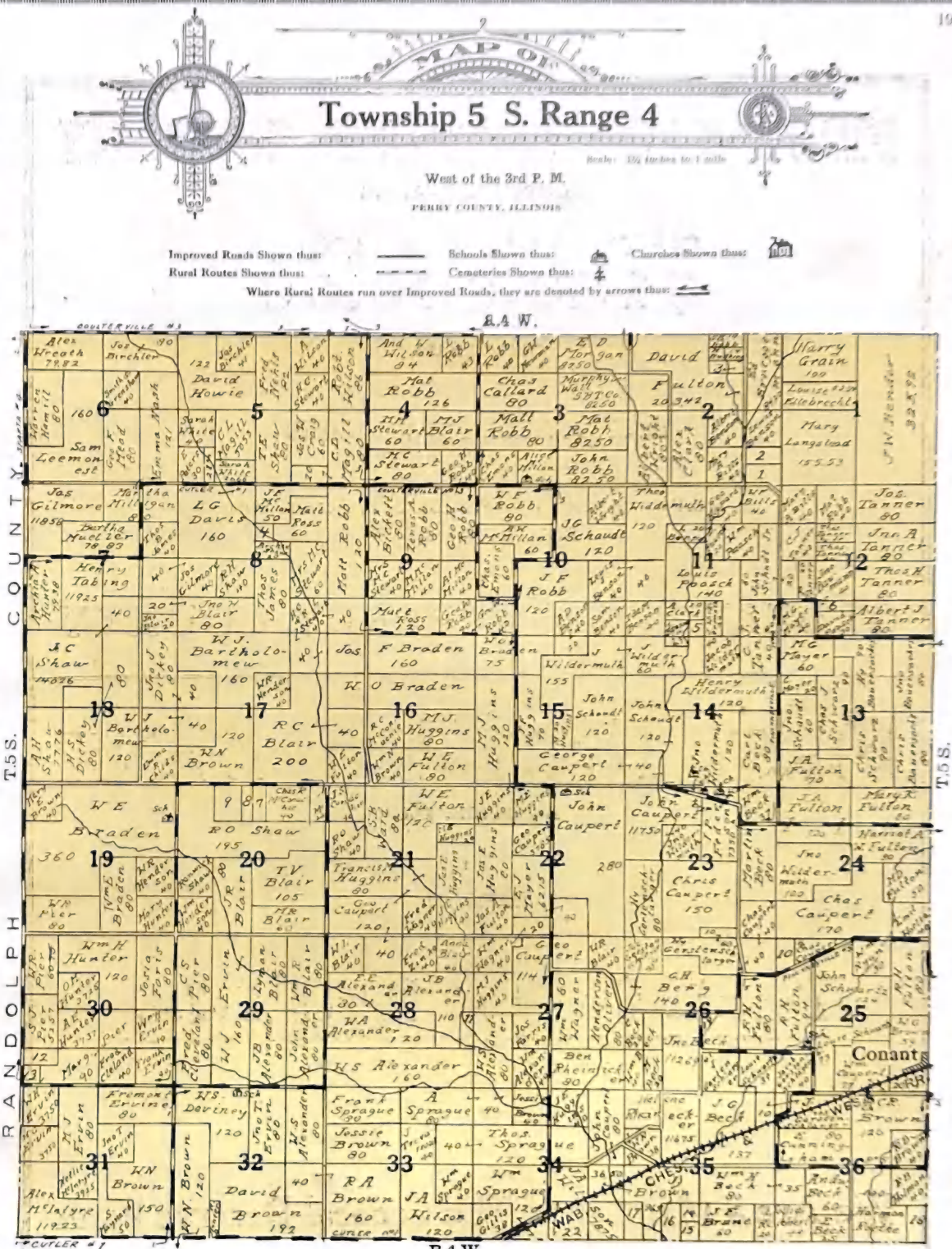
\$5.00

OUTSIDE PERRY COUNTY

And as to our Job Printing

We **P** REACH
THE
GOSPEL
of Good
PRINTING

It is the fad of our Job Department.



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name	Acrea.	Sec.	No.	Name	Acrea.	Sec.	No.	Name	Acrea.	Sec.	No.	Name	Acrea.	Sec.
1.	W. F. Hills	20	22	3.	Albert Benson	10	11	11.	J. T. Ervin	10	28	17.	Wm. Wagner	20	30
2.	Ed Bruggemann	20	22	4.	John Baumann	10	12	12.	T. Ed Hunter	20	29	18.	J. H. Beck	20	30
3.	S. E. Robb	14.25	22	5.	R. J. McConachie	20	20	13.	Joe Ervin	10	30	19.	Anna L. Berg	20	33
4.	Henry Tabing	10	22	6.	R. C. McConachie	30	20	14.	Elizabeth Beck	10	33	20.	F. W. Beck	10	33
				7.	Henry Gerstenschlager	10	20	15.	Andrew Beck	10	33	21.	F. W. Beck	10	33
								16.	Wm. H. Beck	20	33	22.	Ben Riebelick	20	33

FIRST BANK & TRUST COMPANY

of DU QUOIN, ILLINOIS

CAPITAL, SURPLUS AND PROFITS

\$120,000.00

Established in 1860

YOUR PATRONAGE SOLICITED

L. S. SMITH, President F. N. LINZEE, Vice-President

R. S. LINZEE, Cashier

OLDEST BANK IN PERRY COUNTY

FIRST NATIONAL BANK

DU QUOIN, ILL.



Deposits Over One Million Dollars



We Are a Member of The Federal Reserve Bank

MAP OF Township 6 S. Range 1

Scale: 1 1/2 inches to 1 mile

West and part of 1 East of 3rd P. M.

FERRY COUNTY, ILLINOIS

Improved Roads Shown thus: ———

Schools Shown thus: ———

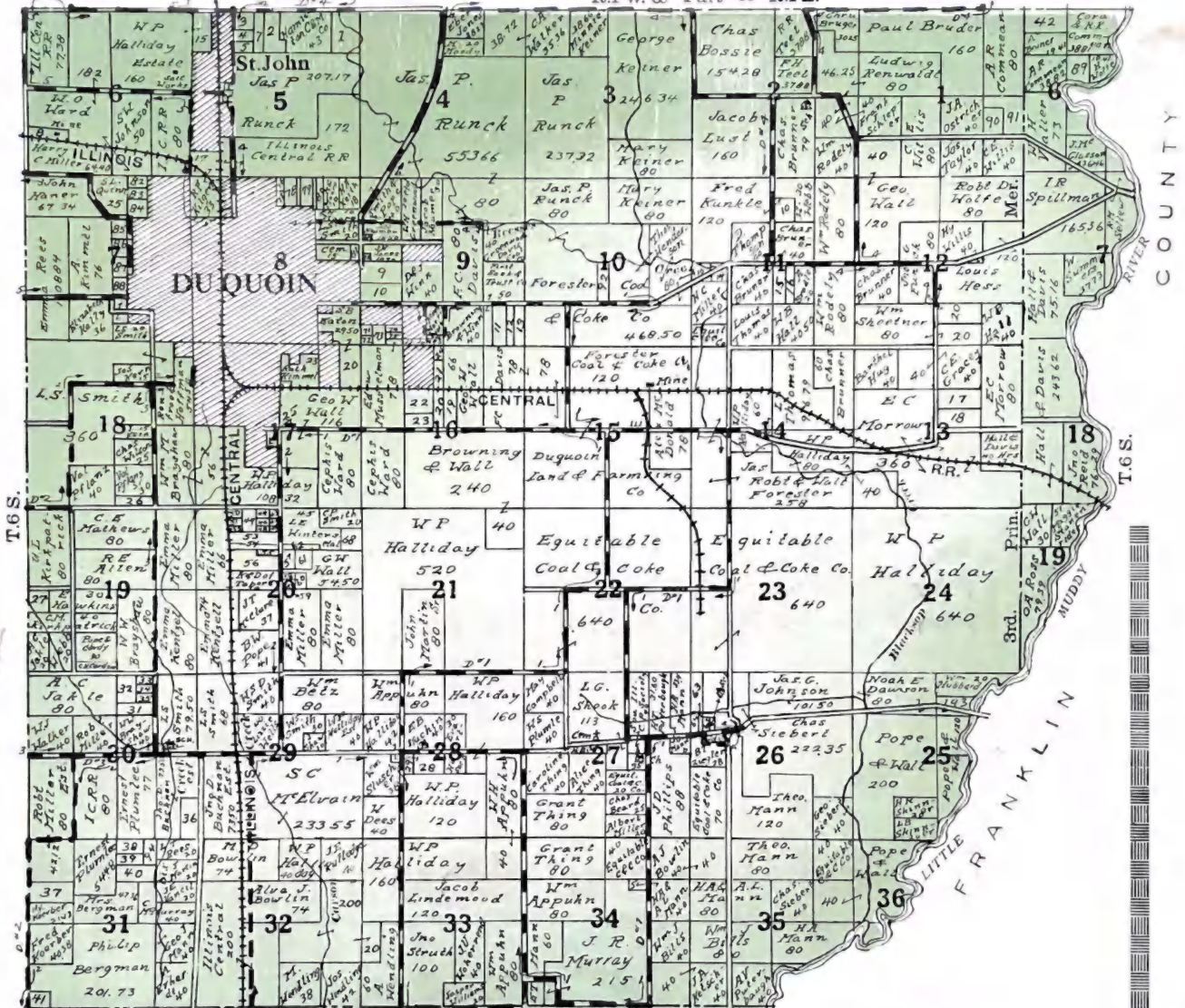
Churches Shown thus: ———

Rural Routes Shown thus: ———

Cemeteries Shown thus: ———

Where Rural Routes run over Improved Roads, they are denoted by arrows thus: ———

R.1.W. & Part of R.1.E.



JACKSON R.1.W. COUNTY
List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
42.	R. D. Wolf	19.41	6	22.	J. G. Davidson	22	16	47.	C. & A. Thig	2	20	71.	E. Musselman	3.40	9
59.	F. T. Teel	19.41	6	23.	E. J. Scott	16	16	48.	Carl McMurtry	2	20	72.	A. Beeber	3.40	9
Twp. 6 S. R.1.W.				24.	Greenwood Davis Coal Co.	2.9	16	49.	Carl McMurtry	2	20	73.	M. Jones	6.35	9
1.	B. W. Pope	20.34	5	25.	Thos. Mills	6.08	17	50.	R. T. McAllister	2	20	74.	E. V. House	2.2	9
2.	J. H. Gregory	34.15	5	26.	C. Branson	10	18	51.	R. T. McAllister	2	20	75.	E. Collins	4.45	9
3.	E. F. Whitelide	4.65	5	27.	August Funk	10	18	52.	Peter Sattler	2	20	76.	J. Alexander	3	9
4.	Mrs. Harry Knight	6.75	5	28.	Vui Huan St.	4	18	53.	M. E. Varum (s. pt.)	15	20	77.	A. Graf	3	9
5.	J. G. Wilson	6.50	5	29.	C. N. Perreis	15	30	54.	Philip Schumke (s. pt.)	15	20	78.	M. C. Harris	10	8
6.	Wm. Cox	10	5	30.	R. Quiley	4.5	30	55.	Robert Zelder	2.06	20	79.	John Kunkel	13	8
7.	Thos. Howell	20	9	31.	C. H. Cardy	5	30	56.	C. Campbell, et al.	17.04	20	80.	E. S. Berry	10	8
8.	Blaine Cent. R. R.	18.50	9	32.	C. M. Flynn	5	30	57.	John Bailey	4.75	20	81.	R. H. Sellev	5.5	8
9.	Jno. Gatz	15	9	33.	G. O. Sharp	20	30	58.	J. L. Richardson	2.38	20	82.	Geo. Fritz	7	8
10.	Edward Greenwood	15	9	34.	Fred Koerber	21.42	30	59.	Wm. Chambers	2	20	83.	A. Fritz	5	8
11.	A. P. Hammond	10	9	35.	E. Plumlee	7.40	31	60.	A. Meze	10	20	84.	A. Deltorre	10	8
12.	P. B. Willington	10	9	36.	G. Crossman	5.00	31	61.	E. R. Ford	10	20	85.	Stecher & Stenle	10	8
13.	J. Cook	10	9	37.	B. Bergman	15.74	31	62.	Hugh Harris	3.25	20	86.	S. B. Ward	0.66	8
14.	J. J. Selbert, Agnes Bruner	10	10	38.	Harriet Beard	4	31	63.	Equitable Coal & Coke Co.	3.25	20	87.	P. N. Pope Est.	13	8
15.	C. C. McClure	0.50	11	39.	Chas. Smith	4	31	64.	J. D. Campbell	3.25	20	88.	A. J. Schlepfer	10	8
16.	Eldridge, Jas. and Wm.	20	13	40.	M. Lambert	2	31	65.	W. H. Stickle	2	20	89.	L. Renwaldt	25	8
17.	E. Eldridge	20	13	41.	Joe Schramick	2	31	66.	W. H. Johnson	2.63	20	90.	R. Bailey	11.50	10
18.	E. Eldridge	20	13	42.	Wm. Vancil	2	31	67.	E. Weisberg	2	20	91.	G. Thig	25	10
19.	E. Jeremiah	12	10					68.	B. Pyle	1.50	9	92.	A. D. Atkins	11.77	31
20.	J. Jeremiah	5	16					69.	B. Clark	1.50	9	93.	Ninckley	7.50	27

FLOWERS AND PLANTS IN SEASON FOR ALL OCCASIONS

GIVE US A TRIAL ORDER

We are members of Florist Telegraph Association

Ship Flowers to all parts of U. S. or Canada
By Wire.

YOUNG MAN WHEN WORDS FAIL YOU
SAY IT WITH FLOWERS

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DEPENDABLE SERVICE

FOR

DEPENDABLE PEOPLE

DU QUOIN STATE BANK

DU QUOIN, ILL.

"Make this bank your business HOME."

W. A. NESBITT

EAST SIDE SQUARE

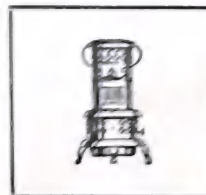


DRY GOODS,
NOVELTIES,
READY-TO-WEAR,
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Sturdy school boys' and girls' Shoes, strongly built of soft, pliable leather, that gives good service.

Good styles, correctly fitting—always below other store prices.

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GRUNER HARDWARE CO.

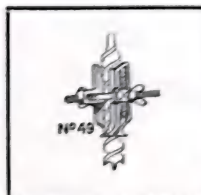
HARDWARE, HOUSE FURNISHING
GOODS; AUTOMOBILE ACCESSORIES
AND KINDRED LINES

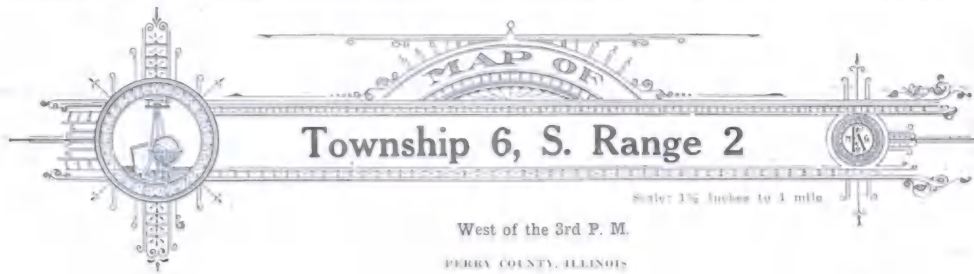
We Meet or Beat all Mail Order House Competition

NORTH SIDE OF SQUARE

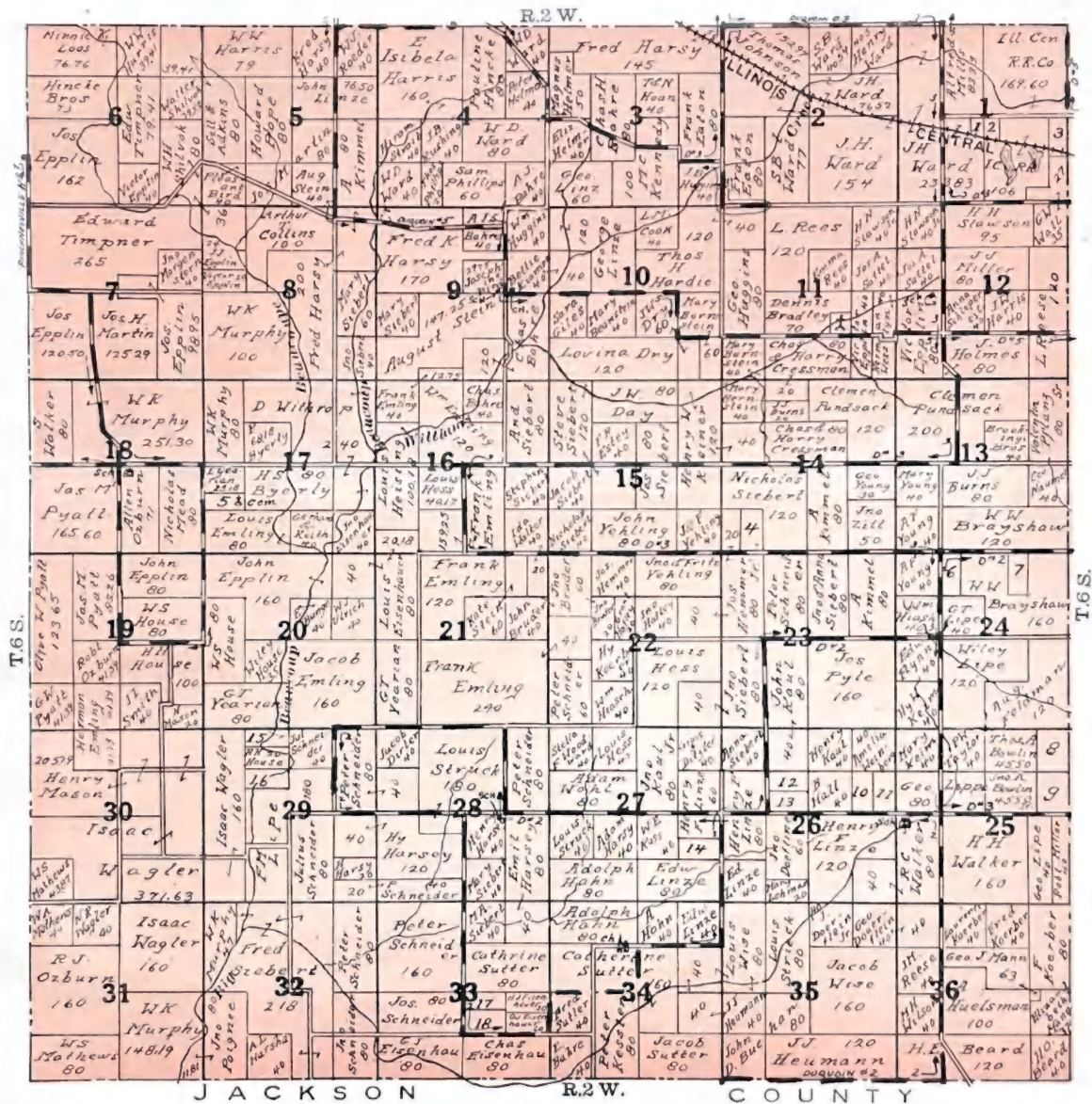
Phone No. 28

PINCKNEYVILLE, ILLINOIS





Improved Roads Shown thus: ——— Schools Shown thus: Churches Shown thus:
 Rural Routes Shown thus: - - - - - Cemeteries Shown thus:
 Where Rural Routes run over Improved Roads, they are denoted by arrows thus:



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
1.	E. A. Schmidt	4	1	5.	W. S. House	11.92	17	10.	Abbie Byers	20	20	15.	Robert Ozburn	20	20
2.	E. E. Schmidt	4.25	1	6.	Jos. Sapher	20	24	11.	Harley Gihner	20	20	16.	Peter Schneider	20	20
3.	Mfg. Fuel Co.	20	1	7.	A. Kimmel	30	24	12.	John S. Siebert	20	20	17.	Henry Elshauer	20	20
4.	Peter Schneider	20	14	8.	A. C. Walker	34.22	25	13.	Alvin Siebert	20	20	18.	Oscar Elshauer	20	20
				9.	D. R. C. Walker	34.22	25	14.	Adolph Hahn	20	20				

THE FIRST NATIONAL BANK

WILLISVILLE, ILLINOIS

Established 1916

Total Resources \$220,000.00

THE OBJECT OF BANKING

Is to provide safety for money and convenience in attending to financial transactions.

These features are well brought out in the service of this Bank, as indicated by our total resources, successful experience and conservative methods, together with its established policy of furnishing every modern facility and placing the best interests of our customers ahead of every other consideration.

Small as well as large accounts are invited. Interest paid on Savings and on Time Certificates of Deposit.

E. A. BROWN, President,
T. J. SMITH, Vice-President H. F. SCHMITT, Cashier,
ORA G. BRADLEY, Asst. Cashier.

LARGE MONUMENTS

In the yard to select from, and as many small heads and marks.

Fine large all hammered monuments, suitable for family lots.

If you are interested and want the best at reasonable prices, you should place your order with us now.

Come and inspect our fine line of monuments. We will not call on you unless you ask us to call.

RANDOLPH MONUMENTAL WORKS

STEELEVILLE, ILL.

A GENERAL LINE OF MERCHANDISE

AT THE

WEST END GROCERY

PINCKNEYVILLE, ILLINOIS



PROMPT AND COURTEOUS TREATMENT



**SELL EVERYTHING AND KEEP
NOTHING**



E. C. LATOWSKY, Prop.

Phone 88, Pinckneyville, Ill.

W. R. HAYES, Pres.

C. H. WEINBERG, Sec'y-Treas.

ESTABLISHED 1862

Du Quoin Bottling Company

(INCORPORATED)

—Manufacturers of—

SODA WATERS, GINGER ALE, ETC., GLASSWARE AND
FOUNTAIN SUPPLIES

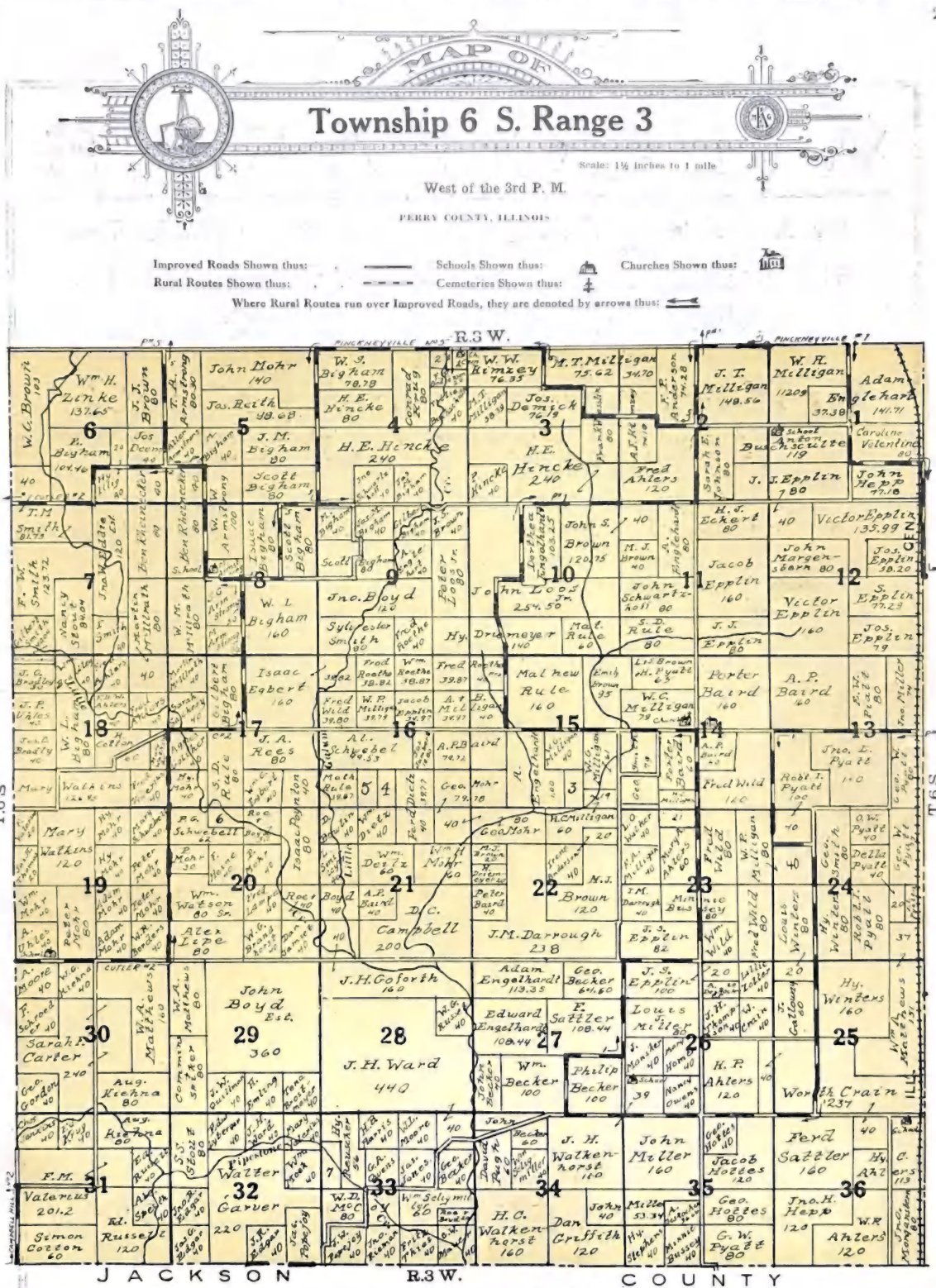
**PERFECTION ICE CREAM
PERFECTION BUTTER**

—and—

BOTTLED COCA COLA

Highest Price Paid For

BUTTER FAT



List of Small Property Owners in This Township Shown on Map by Numbers.

No.	Name.	Acres.	Sec.	No.	Name.	Acres.	Sec.
Top. 6 South, Range 3 W.							
1.	W. S. Bigham	3.5	4	4.	Irene Anderson	19.50	16
2.	C. Rule	10	4	5.	A. & H. Milligan	19.00	16
3.	A. Engelhardt	20	15	6.	Geo. Schwabell	18	20
				7.	Wm. Froemling	25	33

WILCO FARMS

The Most Extensive Breeding Establishment in the Middle West

**REGISTERED HOLSTEIN and GUERNSEY CATTLE
PURE BRED DUROC JERSEY HOGS**

THE HOME OF

Sir Pieterje Maid Ormsby 176605

One of the greatest BULLS of the HOLSTEIN BREED; Wonderful Size and Individuality and Backed by a long list of HIGH PRODUCTION RECORDS on both sides of PEDIGREE. Assisted by Two other Great Sires,

19th Spring Farm King Pontiac 6th 182730

Sir Colantha Ormsby Forest Dekol 162268

Practically all of our cows have A. R. O. Records, both 7-day and Yearly.

**HIGH CLASS Young Bulls and Bull Calves FOR SALE at Reasonable Prices.
SPECIAL REDUCTION TO PERRY COUNTY and SOUTHERN ILLINOIS.**



**JOHANNA
BARNUM
MECHTHILDE**

No. 105553

Half sister to Finderne Pride Johanna Rue, who made the World's Record with almost 1500 pounds of butter in 365 days. She has 14 sisters who average 29 pounds of butter in 7 days, 4 of them made 34 1-2 pounds in 7 days and almost 11 gallons of milk a day.

**This is the Type of Our
Foundation Cows**

LINE BRED DEFENDER DUROCS

The Most Wonderful Family of the DUROC JERSEY BREED

Herd headed by a Son and Grandson of DEFENDER, assisted by other Great Boars

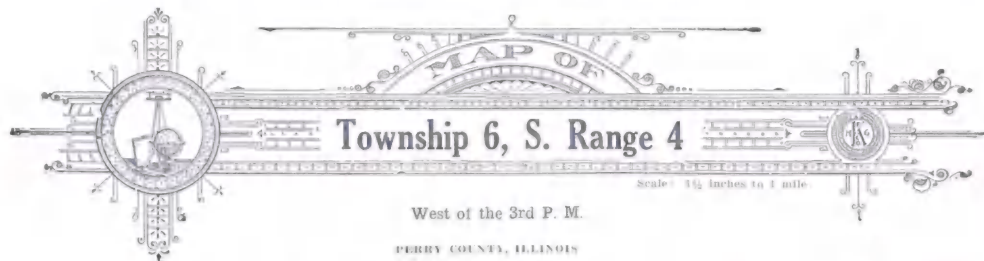
Let us furnish you with a FOUNDATION HERD. WE HAVE A HERD OF 2000 HEAD.

Visitors Always Welcome

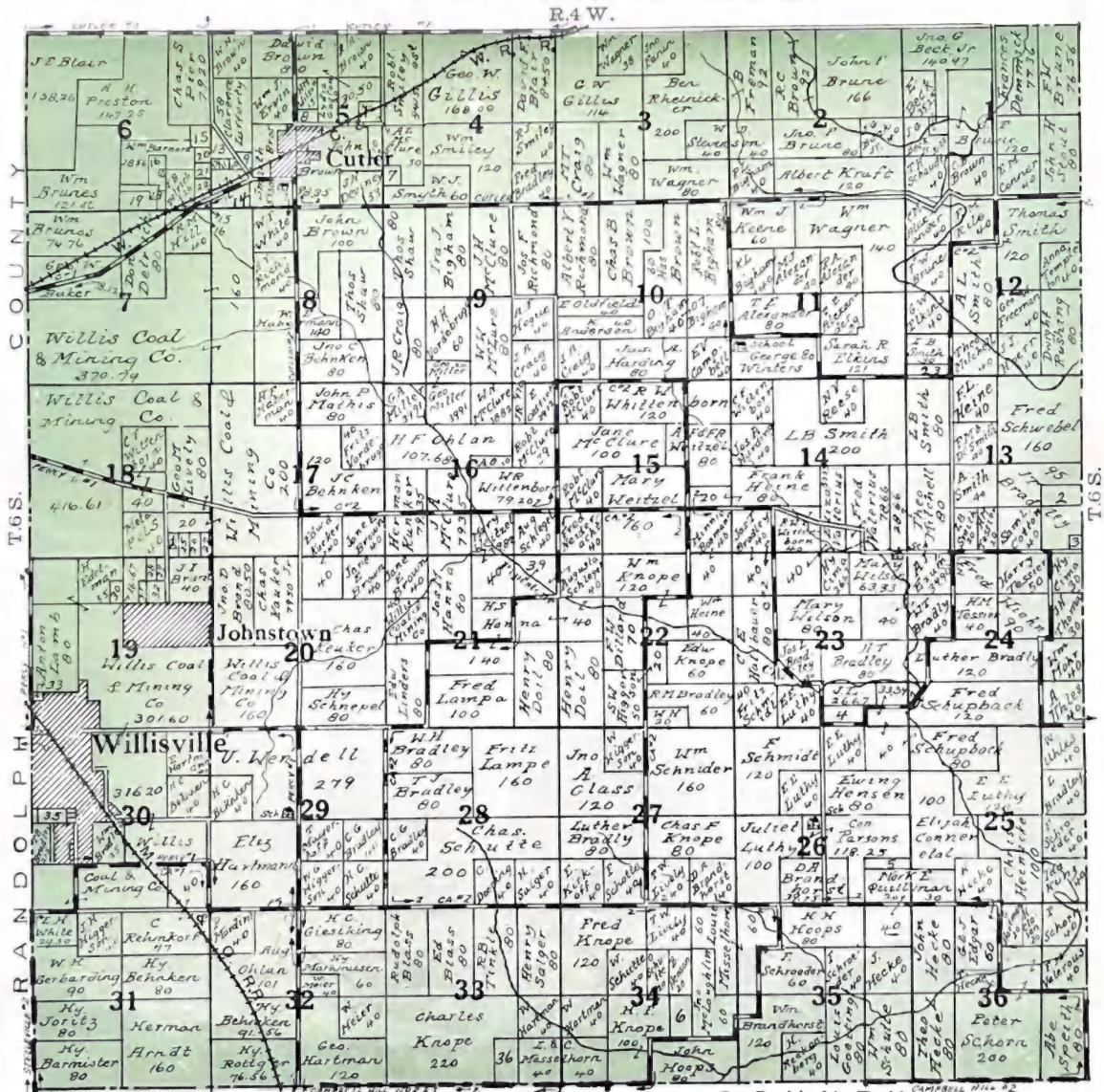
Address all Correspondence

WILCO FARMS
WILLISVILLE, ILLINOIS

W. R. HALE, Manager

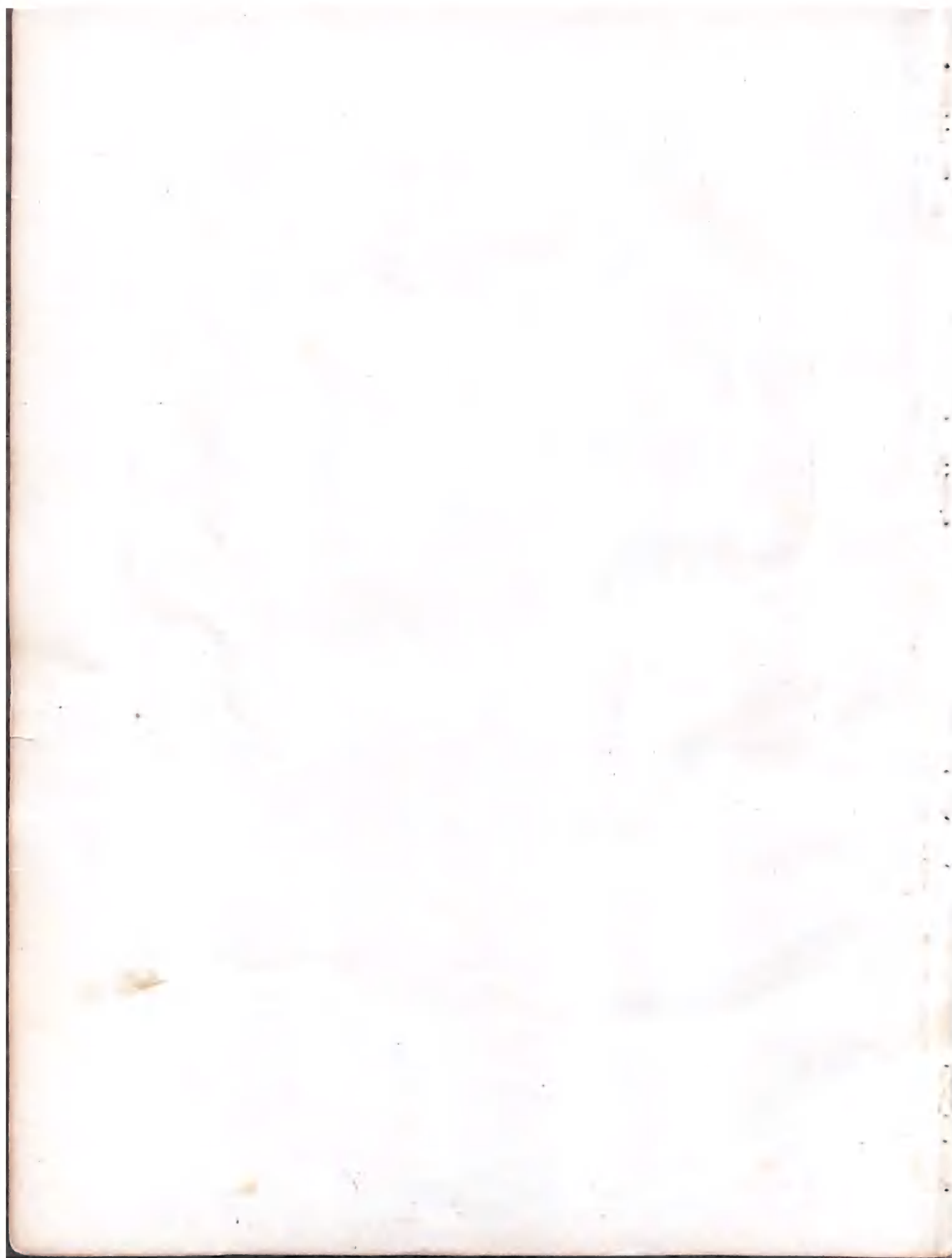


Improved Roads Shown thus: ——— Schools Shown thus: ——— Churches Shown thus: ———
 Rural Routes Shown thus: ——— Cemeteries Shown thus: ———
 Where Rural Routes run over Improved Roads, they are denoted by arrows thus: ———



List of Small Property Owners in this Township Shown on Map by Numbers.

No.	Name	Acres.	Sec.	No.	Name	Acres.	Sec.	No.	Name	Acres.	Sec.	No.	Name	Acres.	Sec.
1	J. O. Bradley	19	13	9	H. Courtney	5	5	18	W. H. Lewis Est.	13.8	6	25	Albert Kilgore	5	19
2	J. B. Davis	5	13	10	J. Eldridge	3.48	5	19	Emm. Dietrich	13.8	6	26	Frank Miller	5	19
3	Eli. Lybarger	20	13	11	W. H. Lewis	2	5	20	Jos. Hardy	4.90	6	27	Neah Dameron	5	19
4	H. C. Tanager Beirs	8	20	12	J. Wesson	2	5	21	Jno. Stevenson	4.90	6	28	M. Howalski	3.33	19
5	V. McLaughlin	20	34	13	Jos. Hardy	7.48	5	22	Jos. Stevenson	4.90	6	29	Alex. Barber	10	19
6	John Brown	10	4	14	Clarence Lafferty	40	5	23	N. J. Reese	10	12	30	Jas. Harrison	1	19
7	John Brown	10	4	15	J. L. Brown	11	6	24	Chas. Bradley	5	18	31	Willis Coal Mining Co.	2.33	19
8	M. Harding	5	5	16	Wm. Kelgley	10	6	25	Fred Hummel	5	18	32	E. Haberman	9.73	30
				17	A. Kelgley	1	6	26	V. Sulder	5	18	33	C. F. Wahlman	20	33



Location With Population of all Incorporated Towns in Illinois according to Latest Official Census

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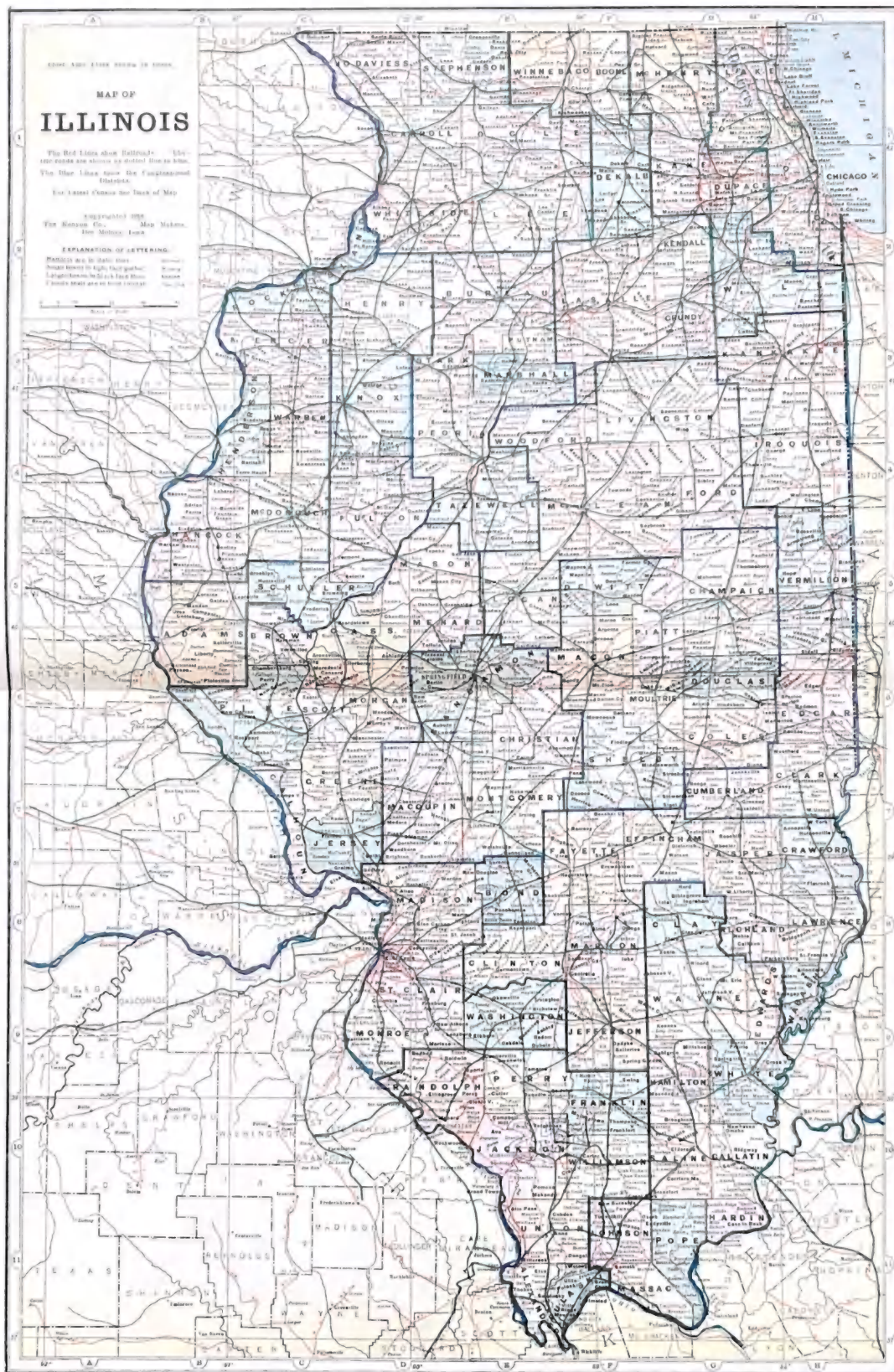
Continued on fourth page forward

MAP OF
ILLINOIS

The Red Lines show Railroads. The Blue Lines show the Transportation Routes.
For latest Changes see Index of Map

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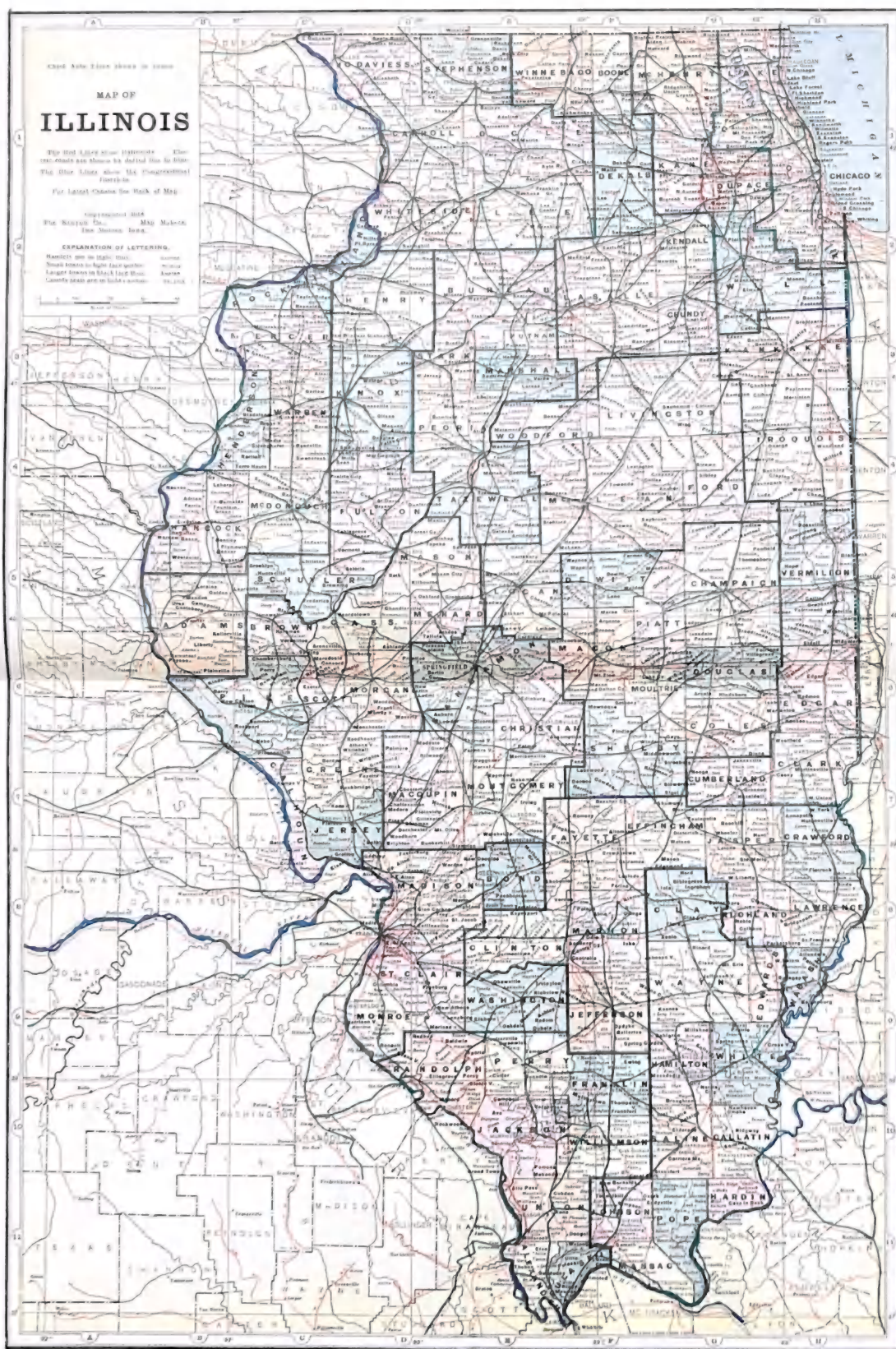
EXPLANATION OF LETTERING:
Political and to State lines
County names in light blue
Large towns in black
Small towns in red
Rivers in blue
Lakes in light blue



The Red Line shows Interstate. The
 rest roads are shown by dotted line in blue.
 The Blue Line show the Congressional
 Districts.
 For latest Census See Back of Map.

Completed 1018
The Stamp Co. Map Makers
The Motion Line

EXPLANATION OF LETTERING.	
Hamlets are in light blue.	Common
Small towns in light blue.	Medium
Largest towns in black type.	Large
County seats are in light blue.	Small



Location With Population of all Incorporated Towns in Illinois,- Continued

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INDEX OF ALL THE CHIEF TOWNS AND CITIES OF OVER 2,000 IN THE UNITED STATES

Third Page
Following

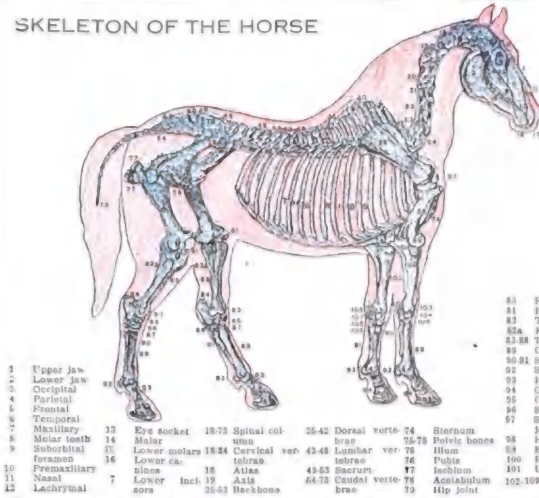
INDEX OF ALL THE CHIEF TOWNS AND CITIES OF OVER 2,000 IN THE UNITED STATES

Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.	Town	Pop.
Alabama City	4018	Orange	2520	Dover	3726	Doughla	5454	Deerfoot	4471	Northwood	1284	Oakdale	2073	Palm Beach	3144	St. Clemente	7797	Moos Point	3064
Andalusia	4018	Greenville	2889	Lafayette	2190	Dalhart	2190	Dunkirk	4471	Orlando	3885	Oakdale	2073	Palm Beach	3144	St. Clemente	7797	Moos Point	3064
Anniston	14112	Leeds	2556	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Atlanta	2018	Pacific Grove	2889	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Beaumont	18170	Palm Alto	4488	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Birmingham	18170	New Castle	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Boston	2185	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Burlington	18170	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Camden	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Charleston	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Chattanooga	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Cincinnati	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Cleveland	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Columbus	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Dallas	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Dayton	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Denver	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Des Moines	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Detroit	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
El Paso	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Evansville	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Fort Worth	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Galveston	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Houston	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Indianapolis	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Jackson	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Jefferson	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Lincoln	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Little Rock	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Los Angeles	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Long Beach	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Los Gatos	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Madera	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Martinez	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Merced	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Mil Valley	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Modesto	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Monrovia	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Monterey	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Napa	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
National City	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Nevada City	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Oakland	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190
Ocean Park	2190	Seaford	2190	Albany	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190	Dayton	2190

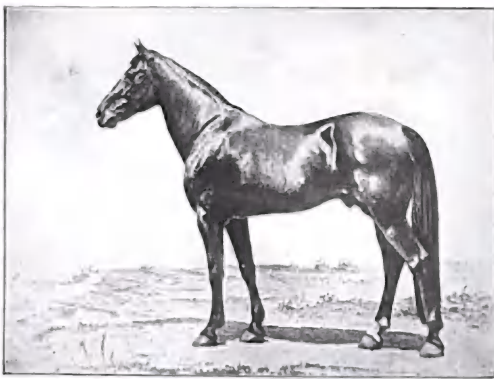
THE HORSE IN HEALTH AND DISEASE

Physiology and Hygiene of the Horse

SKELETON OF THE HORSE



- | | | | | |
|-------------|-----------------|-----------------------|---------------------|-----------------|
| 1 Upper jaw | 13 Eye socket | 18-73 Spinal col- | 26-42 Dorsal verte- | 74 Sternum |
| 2 Lower jaw | 14 Molar teeth | 19-24 Cervical ver- | 43-48 Lumbar verte- | 75 Pelvic bones |
| 3 Occipital | 15 Suborbital | 25-26 Cervical ver- | 49-54 Sacrum | 76 Pubis |
| 4 Parietal | 16 Horns | 27-28 Cervical ver- | 55-56 Sacrum | 77 Ischium |
| 5 Frontal | 17 Premaxillary | 29-30 Cervical ver- | 57-58 Sacrum | 78 Ulna |
| 6 Temporal | 18 Nasal | 31-32 Cervical ver- | 59-60 Sacrum | 79 Humerus |
| 7 Lacrimal | 19 Nostril | 33-34 Cervical ver- | 61-62 Sacrum | 80 Radius |
| | | 35-36 Cervical ver- | 63-64 Sacrum | 81 Ulna |
| | | 37-38 Cervical ver- | 65-66 Sacrum | 82 Carpals |
| | | 39-40 Cervical ver- | 67-68 Sacrum | 83 Metacarpals |
| | | 41-42 Cervical ver- | 69-70 Sacrum | 84 Phalanges |
| | | 43-44 Cervical ver- | 71-72 Sacrum | 85 Sesamoids |
| | | 45-46 Cervical ver- | 73-74 Sacrum | 86 Patella |
| | | 47-48 Cervical ver- | 75-76 Sacrum | 87 Femur |
| | | 49-50 Cervical ver- | 77-78 Sacrum | 88 Pelvis |
| | | 51-52 Cervical ver- | 79-80 Sacrum | 89 Tibia |
| | | 53-54 Cervical ver- | 81-82 Sacrum | 90 Fibula |
| | | 55-56 Cervical ver- | 83-84 Sacrum | 91 Tarsals |
| | | 57-58 Cervical ver- | 85-86 Sacrum | 92 Metatarsals |
| | | 59-60 Cervical ver- | 87-88 Sacrum | 93 Phalanges |
| | | 61-62 Cervical ver- | 89-90 Sacrum | 94 Sesamoids |
| | | 63-64 Cervical ver- | 91-92 Sacrum | 95 Patella |
| | | 65-66 Cervical ver- | 93-94 Sacrum | 96 Femur |
| | | 67-68 Cervical ver- | 95-96 Sacrum | 97 Pelvis |
| | | 69-70 Cervical ver- | 97-98 Sacrum | 98 Ischium |
| | | 71-72 Cervical ver- | 99-100 Sacrum | 99 Ulna |
| | | 73-74 Cervical ver- | 101-102 Sacrum | 100 Radius |
| | | 75-76 Cervical ver- | 103-104 Sacrum | 101 Ulna |
| | | 77-78 Cervical ver- | 105-106 Sacrum | 102 Carpals |
| | | 79-80 Cervical ver- | 107-108 Sacrum | 103 Metacarpals |
| | | 81-82 Cervical ver- | 109-110 Sacrum | 104 Phalanges |
| | | 83-84 Cervical ver- | 111-112 Sacrum | 105 Sesamoids |
| | | 85-86 Cervical ver- | 113-114 Sacrum | 106 Patella |
| | | 87-88 Cervical ver- | 115-116 Sacrum | 107 Femur |
| | | 89-90 Cervical ver- | 117-118 Sacrum | 108 Pelvis |
| | | 91-92 Cervical ver- | 119-120 Sacrum | 109 Ischium |
| | | 93-94 Cervical ver- | 121-122 Sacrum | 110 Ulna |
| | | 95-96 Cervical ver- | 123-124 Sacrum | 111 Radius |
| | | 97-98 Cervical ver- | 125-126 Sacrum | 112 Ulna |
| | | 99-100 Cervical ver- | 127-128 Sacrum | 113 Carpals |
| | | 101-102 Cervical ver- | 129-130 Sacrum | 114 Metacarpals |
| | | 103-104 Cervical ver- | 131-132 Sacrum | 115 Phalanges |
| | | 105-106 Cervical ver- | 133-134 Sacrum | 116 Sesamoids |
| | | 107-108 Cervical ver- | 135-136 Sacrum | 117 Patella |
| | | 109-110 Cervical ver- | 137-138 Sacrum | 118 Femur |
| | | 111-112 Cervical ver- | 139-140 Sacrum | 119 Pelvis |
| | | 113-114 Cervical ver- | 141-142 Sacrum | 120 Ischium |
| | | 115-116 Cervical ver- | 143-144 Sacrum | 121 Ulna |
| | | 117-118 Cervical ver- | 145-146 Sacrum | 122 Radius |
| | | 119-120 Cervical ver- | 147-148 Sacrum | 123 Ulna |
| | | 121-122 Cervical ver- | 149-150 Sacrum | 124 Carpals |
| | | 123-124 Cervical ver- | 151-152 Sacrum | 125 Metacarpals |
| | | 125-126 Cervical ver- | 153-154 Sacrum | 126 Phalanges |
| | | 127-128 Cervical ver- | 155-156 Sacrum | 127 Sesamoids |
| | | 129-130 Cervical ver- | 157-158 Sacrum | 128 Patella |
| | | 131-132 Cervical ver- | 159-160 Sacrum | 129 Femur |
| | | 133-134 Cervical ver- | 161-162 Sacrum | 130 Pelvis |
| | | 135-136 Cervical ver- | 163-164 Sacrum | 131 Ischium |
| | | 137-138 Cervical ver- | 165-166 Sacrum | 132 Ulna |
| | | 139-140 Cervical ver- | 167-168 Sacrum | 133 Radius |
| | | 141-142 Cervical ver- | 169-170 Sacrum | 134 Ulna |
| | | 143-144 Cervical ver- | 171-172 Sacrum | 135 Carpals |
| | | 145-146 Cervical ver- | 173-174 Sacrum | 136 Metacarpals |
| | | 147-148 Cervical ver- | 175-176 Sacrum | 137 Phalanges |
| | | 149-150 Cervical ver- | 177-178 Sacrum | 138 Sesamoids |
| | | 151-152 Cervical ver- | 179-180 Sacrum | 139 Patella |
| | | 153-154 Cervical ver- | 181-182 Sacrum | 140 Femur |
| | | 155-156 Cervical ver- | 183-184 Sacrum | 141 Pelvis |
| | | 157-158 Cervical ver- | 185-186 Sacrum | 142 Ischium |
| | | 159-160 Cervical ver- | 187-188 Sacrum | 143 Ulna |
| | | 161-162 Cervical ver- | 189-190 Sacrum | 144 Radius |
| | | 163-164 Cervical ver- | 191-192 Sacrum | 145 Ulna |
| | | 165-166 Cervical ver- | 193-194 Sacrum | 146 Carpals |
| | | 167-168 Cervical ver- | 195-196 Sacrum | 147 Metacarpals |
| | | 169-170 Cervical ver- | 197-198 Sacrum | 148 Phalanges |
| | | 171-172 Cervical ver- | 199-200 Sacrum | 149 Sesamoids |
| | | 173-174 Cervical ver- | 201-202 Sacrum | 150 Patella |
| | | 175-176 Cervical ver- | 203-204 Sacrum | 151 Femur |
| | | 177-178 Cervical ver- | 205-206 Sacrum | 152 Pelvis |
| | | 179-180 Cervical ver- | 207-208 Sacrum | 153 Ischium |
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| | | 183-184 Cervical ver- | 211-212 Sacrum | 155 Radius |
| | | 185-186 Cervical ver- | 213-214 Sacrum | 156 Ulna |
| | | 187-188 Cervical ver- | 215-216 Sacrum | 157 Carpals |
| | | 189-190 Cervical ver- | 217-218 Sacrum | 158 Metacarpals |
| | | 191-192 Cervical ver- | 219-220 Sacrum | 159 Phalanges |
| | | 193-194 Cervical ver- | 221-222 Sacrum | 160 Sesamoids |
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| | | 197-198 Cervical ver- | 225-226 Sacrum | 162 Femur |
| | | 199-200 Cervical ver- | 227-228 Sacrum | 163 Pelvis |
| | | 201-202 Cervical ver- | 229-230 Sacrum | 164 Ischium |
| | | 203-204 Cervical ver- | 231-232 Sacrum | 165 Ulna |
| | | 205-206 Cervical ver- | 233-234 Sacrum | 166 Radius |
| | | 207-208 Cervical ver- | 235-236 Sacrum | 167 Ulna |
| | | 209-210 Cervical ver- | 237-238 Sacrum | 168 Carpals |
| | | 211-212 Cervical ver- | 239-240 Sacrum | 169 Metacarpals |
| | | 213-214 Cervical ver- | 241-242 Sacrum | 170 Phalanges |
| | | 215-216 Cervical ver- | 243-244 Sacrum | 171 Sesamoids |
| | | 217-218 Cervical ver- | 245-246 Sacrum | 172 Patella |
| | | 219-220 Cervical ver- | 247-248 Sacrum | 173 Femur |
| | | 221-222 Cervical ver- | 249-250 Sacrum | 174 Pelvis |
| | | 223-224 Cervical ver- | 251-252 Sacrum | 175 Ischium |
| | | 225-226 Cervical ver- | 253-254 Sacrum | 176 Ulna |
| | | 227-228 Cervical ver- | 255-256 Sacrum | 177 Radius |
| | | 229-230 Cervical ver- | 257-258 Sacrum | 178 Ulna |
| | | 231-232 Cervical ver- | 259-260 Sacrum | 179 Carpals |
| | | 233-234 Cervical ver- | 261-262 Sacrum | 180 Metacarpals |
| | | 235-236 Cervical ver- | 263-264 Sacrum | 181 Phalanges |
| | | 237-238 Cervical ver- | 265-266 Sacrum | 182 Sesamoids |
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| | | 241-242 Cervical ver- | 269-270 Sacrum | 184 Femur |
| | | 243-244 Cervical ver- | 271-272 Sacrum | 185 Pelvis |
| | | 245-246 Cervical ver- | 273-274 Sacrum | 186 Ischium |
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| | | 249-250 Cervical ver- | 277-278 Sacrum | 188 Radius |
| | | 251-252 Cervical ver- | 279-280 Sacrum | 189 Ulna |
| | | 253-254 Cervical ver- | 281-282 Sacrum | 190 Carpals |
| | | 255-256 Cervical ver- | 283-284 Sacrum | 191 Metacarpals |
| | | 257-258 Cervical ver- | 285-286 Sacrum | 192 Phalanges |
| | | 259-260 Cervical ver- | 287-288 Sacrum | 193 Sesamoids |
| | | 261-262 Cervical ver- | 289-290 Sacrum | 194 Patella |
| | | 263-264 Cervical ver- | 291-292 Sacrum | 195 Femur |
| | | 265-266 Cervical ver- | 293-294 Sacrum | 196 Pelvis |
| | | 267-268 Cervical ver- | 295-296 Sacrum | 197 Ischium |
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| | | 271-272 Cervical ver- | 299-300 Sacrum | 199 Radius |
| | | 273-274 Cervical ver- | 301-302 Sacrum | 200 Ulna |
| | | 275-276 Cervical ver- | 303-304 Sacrum | 201 Carpals |
| | | 277-278 Cervical ver- | 305-306 Sacrum | 202 Metacarpals |
| | | 279-280 Cervical ver- | 307-308 Sacrum | 203 Phalanges |
| | | 281-282 Cervical ver- | 309-310 Sacrum | 204 Sesamoids |
| | | 283-284 Cervical ver- | 311-312 Sacrum | 205 Patella |
| | | 285-286 Cervical ver- | 313-314 Sacrum | 206 Femur |
| | | 287-288 Cervical ver- | 315-316 Sacrum | 207 Pelvis |
| | | 289-290 Cervical ver- | 317-318 Sacrum | 208 Ischium |
| | | 291-292 Cervical ver- | 319-320 Sacrum | 209 Ulna |
| | | 293-294 Cervical ver- | 321-322 Sacrum | 210 Radius |
| | | 295-296 Cervical ver- | 323-324 Sacrum | 211 Ulna |
| | | 297-298 Cervical ver- | 325-326 Sacrum | 212 Carpals |
| | | 299-300 Cervical ver- | 327-328 Sacrum | 213 Metacarpals |
| | | 301-302 Cervical ver- | 329-330 Sacrum | 214 Phalanges |
| | | 303-304 Cervical ver- | 331-332 Sacrum | 215 Sesamoids |
| | | 305-306 Cervical ver- | 333-334 Sacrum | 216 Patella |
| | | 307-308 Cervical ver- | 335-336 Sacrum | 217 Femur |
| | | 309-310 Cervical ver- | 337-338 Sacrum | 218 Pelvis |
| | | 311-312 Cervical ver- | 339-340 Sacrum | 219 Ischium |
| | | 313-314 Cervical ver- | 341-342 Sacrum | 220 Ulna |
| | | 315-316 Cervical ver- | 343-344 Sacrum | 221 Radius |
| | | 317-318 Cervical ver- | 345-346 Sacrum | 222 Ulna |
| | | 319-320 Cervical ver- | 347-348 Sacrum | 223 Carpals |
| | | 321-322 Cervical ver- | 349-350 Sacrum | 224 Metacarpals |
| | | 323-324 Cervical ver- | 351-352 Sacrum | 225 Phalanges |
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| | | 333-334 Cervical ver- | 361-362 Sacrum | 230 Ischium |
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| | | 337-338 Cervical ver- | 365-366 Sacrum | 232 Radius |
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| | | 341-342 Cervical ver- | 369-370 Sacrum | 234 Carpals |
| | | 343-344 Cervical ver- | 371-372 Sacrum | 235 Metacarpals |
| | | 345-346 Cervical ver- | 373-374 Sacrum | 236 Phalanges |
| | | 347-348 Cervical ver- | 375-376 Sacrum | 237 Sesamoids |
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| | | 351-352 Cervical ver- | 379-380 Sacrum | 239 Femur |
| | | 353-354 Cervical ver- | 381-382 Sacrum | 240 Pelvis |
| | | 355-356 Cervical ver- | 383-384 Sacrum | 241 Ischium |
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| | | 359-360 Cervical ver- | 387-388 Sacrum | 243 Radius |
| | | 361-362 Cervical ver- | 389-390 Sacrum | 244 Ulna |
| | | 363-364 Cervical ver- | 391-392 Sacrum | 245 Carpals |
| | | 365-366 Cervical ver- | 393-394 Sacrum | 246 Metacarpals |
| | | 367-368 Cervical ver- | 395-396 Sacrum | 247 Phalanges |
| | | 369-370 Cervical ver- | 397-398 Sacrum | 248 Sesamoids |
| | | 371-372 Cervical ver- | 399-400 Sacrum | 249 Patella |
| | | 373-374 Cervical ver- | 401-402 Sacrum | 250 Femur |
| | | 375-376 Cervical ver- | 403-404 Sacrum | 251 Pelvis |
| | | 377-378 Cervical ver- | 405-406 Sacrum | 252 Ischium |
| | | 379-380 Cervical ver- | 407-408 Sacrum | 253 Ulna |
| | | 381-382 Cervical ver- | 409-410 Sacrum | 254 Radius |
| | | 383-384 Cervical ver- | 411-412 Sacrum | 255 Ulna |
| | | 385-386 Cervical ver- | 413-414 Sacrum | 256 Carpals |
| | | 387-388 Cervical ver- | 415-416 Sacrum | 257 Metacarpals |
| | | 389-390 Cervical ver- | 417-418 Sacrum | 258 Phalanges |
| | | 391-392 Cervical ver- | 419-420 Sacrum | 259 Sesamoids |
| | | 393-394 Cervical ver- | 421-422 Sacrum | 260 Patella |
| | | 395-396 Cervical ver- | 423-424 Sacrum | 261 Femur |
| | | 397-398 Cervical ver- | 425-426 Sacrum | 262 Pelvis |
| | | 399-400 Cervical ver- | 427-428 Sacrum | 263 Ischium |
| | | 401-402 Cervical ver- | 429-430 Sacrum | 264 Ulna |
| | | 403-404 Cervical ver- | 431-432 Sacrum | 265 Radius |
| | | 405-406 Cervical ver- | 433-434 Sacrum | 266 Ulna |
| | | 407-408 Cervical ver- | 435-436 Sacrum | 267 Carpals |
| | | 409-410 Cervical ver- | 437-438 Sacrum | 268 Metacarpals |
| | | 411-412 Cervical ver- | 439-440 Sacrum | 269 Phalanges |
| | | 413-414 Cervical ver- | 441-442 Sacrum | 270 Sesamoids |
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| | | 421-422 Cervical ver- | 449-450 Sacrum | 274 Ischium |
| | | 423-424 Cervical ver- | 451-452 Sacrum | 275 Ulna |
| | | 425-426 Cervical ver- | 453-454 Sacrum | 276 Radius |
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| | | 439-440 Cervical ver- | 467-468 Sacrum | 283 Femur |
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| | | 443-444 Cervical ver- | 471-472 Sacrum | 285 Ischium |
| | | 445-446 Cervical ver- | 473-474 Sacrum | 286 Ulna |
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| | | 453-454 Cervical ver- | 481-482 Sacrum | 290 Metacarpals |
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GEORGE WILKES, founder of the great Wilkes family of trotters.



MORGAN HORSE, HILLSIDE, winner at Illinois State and Chicago Shows.

COMMON CAUSES OF DISEASE. Word has already been spoken of the need of accurate and prompt diagnosis of disease in the horse. Some leading causes may be here enumerated. Copious drinking of cold water when the horse is warm, sudden chilling from rain or cool drafts, and indigestion are chief causes of Cramp Colic, or Spasmodic Colic. Overfeeding with green food, notably new hay or grain, indigestion, and overdrinking when warm, cause Wind Colic, or Flatulence. Overeating, especially if following overexertion and sudden cooling, when standing unblanketed or from too much cold water while overheated, or by cold drafts in stables, cause Founder, or Laminitis. These are the principal food and drink diseases from over-indulgence.

Mouldy, sour food, impure water, damp quarters, and indigestion and infection due to bad teeth cause Diarrhoea, or Scours. Impure stagnant water, poor pasture, mouldy or late cut hay, and general debilitation result in Worms. These are the principal diseases of impure food or water. A catarrhal infection, caused by catching cold, especially during severe storms, and general debility from insufficient or improper food, in Distemper, or Strangles. Overtaxing strength, general debility, unsanitary quarters, sudden chill from drafts on certain parts of the body, notably the flanks, cause Lung Fever. These are the principal diseases of the air-passages due to exposure and a run-down condition. Heaves or Broken Wind, in another of this class, usually found in constantly used draught horses, especially among the hard pullers in teams, where an over supply of coarse food is given. Properly cared for, horses should never have heaves.

PROMINENT SYMPTOMS of these diseases of the horse that may usually be first met by home treatment are as follows:

Sudden uneasiness, quick almost frightened looking back toward the flanks, restlessness, pawing, sudden lying down and as abrupt getting up again, rolling rapidly and in a frightened manner, apparent straining for urination (often mistaken for some kidney or bladder disease) and a general condition of alarm coming on suddenly, but relieved by periods of entire ease, tell of Cramp or Spasmodic Colic.

Much the same symptoms at first, but coming on slowly, with only slight uneasiness, the horse appearing stupid and dull, slow, difficult breathing with often profuse sweats, trembling legs and a staggering walk, with the belly distended like a drum are the symptoms of Wind or Flatulent Colic. The two forms of Colic are best diagnosed by the suddenness of the seizure from Cramp Colic and the greatly distended belly in Wind Colic.

Troubles in the breathing apparatus usually indicate Lung Fever, Distemper, or the Heaves. The spasmodic breathing of the latter, the air being taken in naturally, but being expired (driven outward) with two spasmodic efforts, often with a short grunt or cough, characterizes and easily identifies the Heaves. Legs wide-apart, head hanging low, wildly staring, frightened eyes, tail becoming dull, sunken, almost glassy, high fever, a pounding pulse, rapid breathing, deep-colored urine and a tendency to constipation, all speak loudly of Lung Fever (pleuro-pneumonia). This calls for the quick summoning of the skilled veterinarian. The symptoms of Distemper in animals, much alike in all, are too well known to call for description here. Running from the nose and eyes, accompanied by a short, dry, hacking cough are very characteristic symptoms of Distemper.

The common intestinal troubles are Founder, Worms, and Diarrhoea, or Scours. The former is easily told by the stiffness and lameness of the elbow, hot, dry feet, very evident acute suffering, absolute inability to travel or even to move in bad cases, and suppurating of the foot membranes in the final fatal stages. Here, also, the skilled practitioner should be had with all speed. There is not the apparent need of immediate relief in Worms, as in the foregoing. The early stages partake somewhat of the appearance of the Colic; nervous switching of the tail, rubbing its root against fences and trees, a hide-

bound, pot bellied appearance, with no shudding of the coat when curried, all tell of the presence of parasitic Worms. Loose bowels, emaciation, great weakness and weariness, with often very watery manures, indicate Diarrhoea, or the Scours.

In the hottest weather the horse, hard working in the field or rapidly driven along the road, may stop suddenly, pant violently, spread his legs far apart, totter on unsteady limbs, and even drop suddenly to the ground. This is congestion of the brain, or Sunstroke, and is very apt to result in early death, if the case be a severe one and aid be not quick at hand. With the head low between the forelegs, bulging eyes, the pupils smaller than usual, dilated nostrils and panting sides, violently heaving but irregular pulse, strong thirst, weak, sunstroke is easily diagnosed.

INFILTRIES, WOUNDS, AND LAMENESS are too diverse in their manifestations for us to describe all their intricate systems here. They can be sufficiently indicated under the various methods of treatment to follow. Most of them are of slight importance and respond readily to home remedial treatment.

ORDINARY HOME REMEDIES for the horse are those for the diseases above described, and the injuries and wounds of common occurrence. They will be taken in the order, already used in the foregoing diagnostic description.

CRAMP OR SPASMODIC COLIC calls for the earliest possible relief. A heavy dose of Jamaica ginger, or even of a half pint of whiskey, in hot water is quite sure to give temporary and welcome aid. Follow either of these with an ounce of sulphuric ether, hourly for three or four hours. If good results are had follow with a pint of raw linseed oil. A rectal injection of warm soap water is advised by some. Follow these with two tablespoonful of aromatic spirits of ammonia, every hour for three or four hours. If, after the administration of the sulphuric ether good results are not manifest, hasten the coming of the veterinarian.

WIND COLIC OR FLATULENCE. For the first treatment give a teaspoonful of common baking soda and an abundance of powdered charcoal. Follow with a good strong physic: a pint of raw linseed oil, or an ounce of aloes. A rectal injection of two ounces of turpentine in clear oil of the raw linseed oil will usually produce excellent results. Aromatic spirits of ammonia, two tablespoonful hourly for four or five doses, with blankets wrung out in very hot water, applied every ten minutes over the loins, is a treatment recommended.

THE HEAVES, or Broken Wind, is not entirely curable;

the vapor, arising from hay in boiling water, produce excellent results, care being taken to avoid chilling afterwards.

FOUNDER, or Laminitis, more than almost any disease of the horse, calls for the ounce of prevention that will render the pound of slow relief unnecessary. Immediately upon discovering that a horse is foundered he should be made comfortable in a warm, dry stall. Hot water applications to the feet for eight hours, or so, are called for in case of their slight congestion; if, however, congestion is considerable the feet should be kept in a bath of cold water for several hours. Bran mash and ample cold drinking water for at least a week are called for; and for four or five days swabs of cloths, freshly wet half-hourly with cold water, should be kept on the feet. A horse should be used lightly and carefully for quite a month after foundering.

WORMS call for building up the system, quite as well as for the election of these parasites. A good, strong tonic, or some first-class condition powder is required for this purpose. First give a good drench; three ounces of raw linseed oil in which is one ounce of turpentine is excellent. Follow this with an ounce of aloes, and repeat both doses twice daily for three to five days. An infusion of tobacco used as a rectal injection often has a most helpful effect. Keep it up, until the worms are expelled.

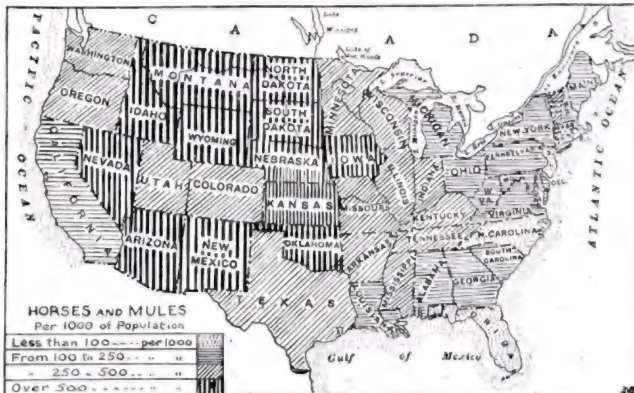
DIARRHOEA, or the Scours, call first for good care in feeding and in the drinking water. Ten grains of pulverized opium in five drachms of powdered chalk should be given every three hours. This may be followed by milder remedies, such as white oak bark tea, or unbleached wheat flour in water. Ample rest is also necessary.

SUNSTROKE. Rapid application of water, as cold as possible, thrown over the whole body of the horse, especially on the back of the head and upper spine, is first called for. Vigorous rubbings of the limbs and sides with hair oil, or coarse cloths, should follow. Then repeat the douching with water. Authorities highly recommend the injection of from thirty to sixty grains of quinine under the skin with a hypodermic syringe. During the worst depression a prompt stimulant is called for; the following is highly recommended: two ounces of sulphuric ether in a pint of water, used as a drench. As well spoken of is twenty drops of tincture of aconite in a pint of ale, or beer. Afterwards the horse should be turned out to pasture where there is ample shade; and he should not be used later in the hot sun, as Sunstroke is most likely to easily overcome the horse once the victim of it.

LAMENESS calls for very immediate attention, and while rest is the principal factor in recovery it is a factor that should be availed of at once. The leg mechanism of the horse is fragile, in comparison with his great strength and all that is expected of him in work. Hence it is very easy to so increase lameness, by carelessness or neglect, as to render it permanent. Gentle, but firm rubbing with a good liniment frequently aids somewhat, but music is not a cure.

CUTS FROM WIRE-FENCE and like injuries, should have the incised edges that will not readily heal trimmed away, the wounds carefully cleaned with an antiseptic wash, (carbolic acid, one part in 20 of water) and the wound stitched together, if at all possible. An ounce of tar and vasoline, with a drachm of carbolic acid added makes an excellent healing lotion. Others highly recommend ointment the horse thinly with vasoline, and immediately after the application of 1 drachm of bismuth, 20 grains of zinc oxide, and 40 grains of calomel, thoroughly mixed.

OLD SORES. While the above will answer well for fresh, clean sores, old sores, especially with proud flesh, require a stronger ointment: the following is excellent: 2 ounces of resin and 1 ounce of corrosive sublimate, thoroughly mixed, dusted on lightly, left on for 48 to 60 hours, then washed off carefully and followed by the above healing ointment. Repeat every 5 to 7 days, if necessary. Corrosive sublimate is a very dangerous poison.



but it may be so treated that the horse will be brought into such condition as to do a fair amount of work in comparative comfort. In very mild cases what is almost an entire cure will result, but in the Heaves are quite sure to return with renewed violence unless great care and easy work are the horse's lot. Turned out to pasture and fed laxative food (cornmeal, potatoes, carrots, turnips, and like root crops, will be found very helpful. Periods of special oppression in breathing should be relieved by sedatives. The bowels must always be kept in free action, and the stable very clean and well aired. Clean, sweet hay should be given very sparingly and only at night.

The following is highly recommended for the Heaves by several authorities. Take a half-ounce of black antimony, one ounce each of iodo and tartar emetic, and two ounces each of elecampane, Spanish brown, and nitrate of potash; pour all into a mortar and thoroughly grind.

ounce of licorice powder, mix very thoroughly and pass through a fine sieve. For three days give the horse a teaspoonful twice daily, then daily for three days, and then a dose every three days until cured.

LUNG FEVER is a most serious disease and should have the early attention of the skilled veterinarian. In the meantime an equable temperature with blankets, and a well ventilated but not draughty stable are of prime importance. Keep up the circulation by rubbing the legs with the hand and with applications of a hot liniment, and flannel bandages, twice daily. A blanket wrung out in hot water, applied over the chest and covered by a dry blanket, changed every half hour for six or eight times will usually be found very beneficial. Bran mash, soaked out, and green feed, if possible, should be given.

DISTEMPER, or Strangles, calls mainly for soft food (grass, alfalfa hay, bran mash, etc.) and for thorough protection from draughts, colds, or inclement weather. If the animal is not free in action a handful of Glauber salts, thrice daily, is the dose for a grown horse. Where there is much discharge from the nostrils, warm poultices of the neck, or a good steam bath from



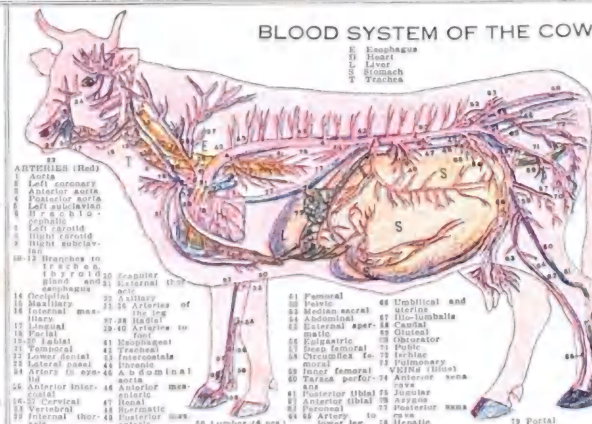
HACKNEY STALLION, ROYAL DANEGELT, winner at many English shows.



FERCHERON STALLION, HAUTOBOIS, winner at International Exposition 1911.

Physiology and Hygiene of the Cow

BLOOD SYSTEM OF THE COW



contagious and infectious. The well-known adage might be changed to read, in the case of farm animals, "an ounce of prevention is worth a ton of cure," this especially applies to the first two causes, above. By painstaking care with regard to these, feeding and shelter, the stock raiser can feel assured of sound and profitable stock under almost all circumstances. In the comparatively few cases where it results otherwise, it should be remembered that an untrained person should give medicine very cautiously; and in all severe cases a veterinary surgeon should be sent for promptly.

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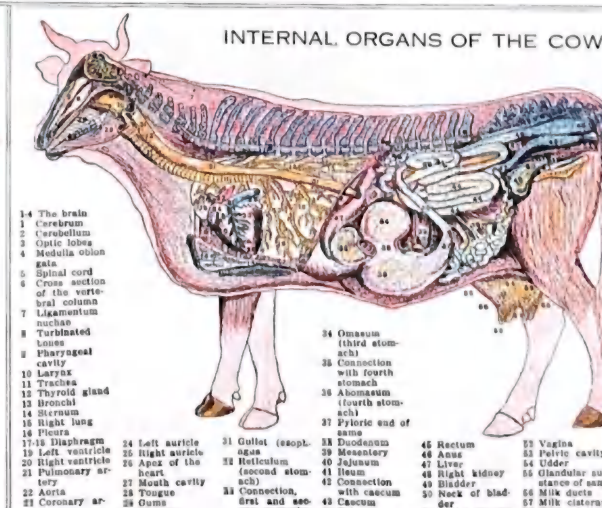
THE DISEASES OF CATTLE are usually caused by the following, here named in the order of their probable importance: 1—Careless and unwise feeding; 2—exposure to the elements and neglect of proper care; 3—the diseases of parasitic origin, and 4—

THE COMMON DISEASES are often treated by home remedies, without the aid of the veterinarian or while he is on his way. An acute or anginal one, of course, of first importance, and the diseases of cattle often baffle even professional skill at first, this is by no means a simple matter. Care must therefore be taken that the diagnosis be certain. Those troubles that are most characteristic and to be most readily diagnosed are such as farrowing, distemper (dysentery), Constipation (especially in calves), Malignant Anthrax (splenic fever or splenic apoplexy), Symptomatic Anthrax (black leg or black quarter), Bloat (typanitis or hovey), and Big Jaw (lumpy jaw).

Many of the above are diseases that are greatly reduced in seriousness, if not entirely prevented, where care in feeding and housing are made matters of prime importance. Considerable attention must be given, in point, where the care and food of the expectant mother and a few days' care with the calf will reduce the troubles to a very small percentage. The most serious and, consequently, is of the greatest danger in the young calf, where it causes great mortality. Calves closely housed are especially liable to this disease. It is caused by poor feeding, hand-feeding from unclean pails, poorly ventilated, dark and damp quarters and is increased by the presence of bacteria in some cases, acting as though an infection, it carries off nearly every calf in the herd.

TO RECAPITULATE! An abundance of fresh air, plenty of sunlight, freedom from chilling draughts in sleeping quarters, ample, well-chosen, and pure food, and the quick isolation of any suddenly sick member of the herd, will assure a great percentage of success in cattle raising.

INTERNAL ORGANS OF THE COW





JERSEY COW, BOSNIAN'S ANNA

THE COMMON DISEASES OF Cattle, as we have already seen, are those due mainly to careless and unwise feeding, to exposure and stabling neglect, to contagion, and to parasites. Of those diseases capable of home treatment, or of immediate alleviation or of temporary relief while the veterinarian is on his way, the following symptoms may be described and classified.

SYMPTOMS OF INTESTINAL DISEASES of easy relief are of the two, entirely opposite kinds—Diarrhoea and Constipation. The former causes much anxiety among cattle raisers where it appears, as most frequently it does, among the young animals. Calves appear to be more subject to the serious torments of this disease than do any other of the domestic animals. Dysentery, or Scours, as the disease is often called, frequently takes on the appearance of an infectious disease; and not uncommonly such a visitation attacks practically every calf in the herd. This is more likely to be the case where the calves are closely housed together, especially in low-lying and in damp districts. Coming on suddenly, usually before the calf is ten days or two weeks old, it is characterized by very fluid and highly offensive, light colored evacuations, which become very frequent and are often accomplished only after severe straining. The poor little creature is greatly weakened, lies down most of the time, loses flesh rapidly, and shows many signs of profound distress. Deep sunken eyes, uneasy breathing, and entire loss of appetite are other symptoms. If not entirely relieved during an early stage of the disease, death will soon follow.

If, after the second or third day of its life the calf refuses to suck the mother, appears exceedingly uneasy, keeps up a more or less continuous moaning, spends much of its time prone, is constantly making futile efforts toward evacuating the bowels, breathes hurriedly and often painfully, Constipation is a pretty safe diagnosis. This is a disease that should have early expert attention, as it is not a disease that can be neglected with impunity.

BLUET, another of the intestinal disorders, known also as Hovey, or as Tympanitis, is known by the evident distention of the abdomen and by the drum-like sound upon tapping on the distended region, which is more characteristic of the left side of the animal. Uneasiness and very evident signs of great distress, difficult breathing and nervous trembling are frequent symptoms. If not soon relieved, the sufferer will sink to the ground and death is likely to follow soon after.

THE INFECTIOUS DISEASES of Cattle are of several sorts; but we need consider only three of them here, under the topic of home treatment. Chief, and certainly the most dangerous of these, are the two forms of Anthrax—Symptomatic and Malignant. The first of these, Symptomatic Anthrax, Black Leg or Black Quarter, is due to inoculation with a bacillus and usually attacks calves from three months to two years old. The germ finds its way into the system through an abrasion or wound, often very small and inconspicuous. It is claimed that it may be taken into raw or sore air passages through the inhalation of dust containing the bacilli, or into the digestive tract with food. It is characterized by a puffy swelling, usually on a leg or quarter, or on the rump or shoulder, although the back or neck is sometimes the seat. When firmly pressed the swelling crackles; this is diagnostic. Other symptoms are marked. A desire to be alone, head extended and held low, breathing hurried and rasping, decided stiffness of joints and lameness are symptoms usually preceding the appearance of the swelling.

Malignant Anthrax, variously known as Splenic Fever, Malignant Pustule, Charbon, etc., is of all diseases of domestic animals most to be dreaded, especially as it is extremely infectious to all warm-blooded animals and at times suddenly fatal to man. In man it is commonly called Malignant Pustule, though Pulmonary or Intestinal Charbon are also common names. It is the product of infection by the *Bacillus anthracis*, which may be introduced into the system in several ways, through irritation or

abrasion of the skin or mucous membrane, through the digestive tract with food, or by being carried with the bite of a small fly, *Somus* *Californicus*, closely allied to our common house fly and greatly dreaded around army hospitals and on fields of battle.

The first symptom is usually a sharp chill or violent rigor, a temperature of 104 degrees to 107 degrees, flukes in one bodily locality and cold elsewhere at the same time, soon to be followed by spasms, profound nervous symptoms, bleeding from the nostrils and in passages from the bowels, often followed by extreme stupor and quick-following death, preceded by abnormally low temperature. As a rule the victim of acute Malignant Pustule dies within one or two days; in subacute they may live for a week.

In the latter the sores become gangrenous; a very fair sprinkling of such cases recover. The greatest care must be taken that the animal so infected does not come in contact with others of the herd and is kept from scratching against surfaces accessible to other farm animals, or to humans; or where that is likely to take place, such surfaces are immediately disinfected and kept so. Above all, flies and mosquitoes must be rigorously kept away from any possibility of reaching the sores or any discharges of effluvia. In case of death—the animal should be buried, or, still better, be buried deep in an ample bed of quicklime. Maxon, in his extensive investigations, proved that an infected carcass, buried in ordinary earth and six feet deep, after eight years was surrounded by animal decay in the loam that contained the living spores of Anthrax.

Another infectious disease, though in this case due to a bacterium (a germ of vegetable origin) rather than to a bacillus, is **LUMPHY JAW**, or Actinomycosis, Big Jaw, Wooden Tongue, and known by other names as well. While usually a disease of cattle, it often attacks all animals, humans as well as others. It usually appears in the head, hence several of its names, and is the product of the presence in the tissues of the raw, tongue bacterium, *Actinomyces*, found upon various species of fodder-plants, but especially on the grasses. Infected plants if eaten by an animal will with abrasion or other means introduce the germ into the system. Its infection of man has been traced to picking the teeth with a straw or spear of grass from a field where infected cattle had been grazing, and where discharges from their mouths or



GUERNSEY COW, GLENCOE'S BOLEEF

secretes, as this is strongly invasive in its nature. The succinum (contents of the calf's intestines when born) is often retained; this is abnormal and a form of constipation to be dreaded. Warm water well mixed with sweet oil and soap, used as injection, will usually suffice to remove the succinum. Occasionally, two to four spoonfuls of castor oil, administered internally, may be necessary. One dose should suffice.

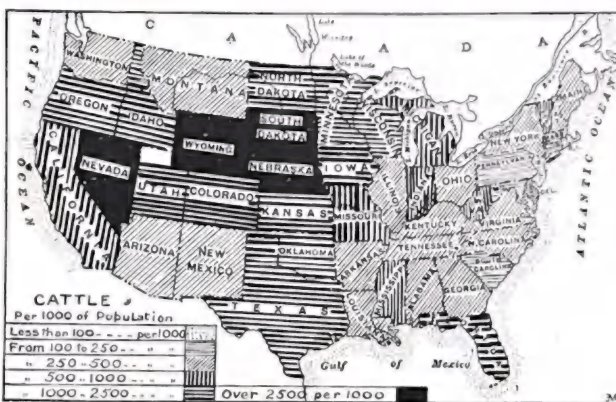
BLUET, Tympanitis, or Hovey, is a disease, as already indicated, varying in urgency. In the less immediate or threatening cases, it is first important to keep the mouth open for the ready escape of the imprisoned gas and to use some remedy to stop its formation. Take a block of wood, about three-fourth of an inch square and 3 or 10 inches long and place it far back in the mouth like a driving bit, and tie it in place with strings from each end, meeting at the back of the head. Administer ammonia water (hartshorn) in half ounce doses in a quart of water; or, which is probably the more easily obtainable, a quart of milk in which is thoroughly shaken 1½ ounces of turpentine; either of these is intended to stop the formation of the gas; the wooden bit to allow its easy escape.

ANTHRAX, Symptomatic, or Black Leg, is so immediately dangerous that in very many cases there is no hope. Vaccination or preventative inoculation is really the only true hope. The Federal Bureau of Animal Industry at Washington supplies an Anthrax vaccine that is thoroughly reliable and that can be had at a nominal price. Any intelligent breeder can readily follow the directions that accompany it. Many of the State Experiment Stations also supply such a vaccine, and there are several commercial vaccines on the market. They are all administered by hypodermic syringe. Tonics and drugs are usually without any avail; they are poor dependences, at the best. As death usually results quickly, the only safe method of dealing with an infected animal is most advisable, after which deep burying in quicklime is the only safe method. All places where an infected creature has been must be most thoroughly and copiously disinfected; burning hatters, all oils, pails, etc., is most advisable.

ANTHRAX, Malignant, or Splenic Fever, Charbon, or Malignant Pustule, also is a disease of such deadly virulence as to call for the prevention of vaccination and to hold out small hope for curative methods, after the event. See as to vaccines in the above section on Symptomatic Anthrax. The Carbuncular form, a milder form already described, sometimes may be cured by strong antiseptic solutions (such as carbolic acid or bichloride of mercury solutions) applied to the carbuncles, or tumors, freely and constantly. This must be supplemented by other sanitary treatment in every respect. Read the above section as to destruction of the carcass and disinfection of all surroundings and accessories.

LUMPHY JAW, Wooden Tongue, Actinomycosis, etc., may often be relieved, if taken very early, by a strong blister made of mercury benzoide and powdered cantharides, in equal parts and thoroughly mixed, rubbed well in with six parts of vasoline or very pure lard, preferably the latter. In advanced cases liberation of the pus and the insertion of caustic, such as corrosive sublimate in a capsule, or entire dissection of the diseased area, where that is possible, may result favorably. In that form known as Wooden Tongue, 2 to 1 drachms of potassium iodide may be effective if continued twice daily until iodism is manifested; but this is really only a safe treatment in the hands of the skilled veterinarian.

CAUTION. It should be added and be emphasized here that, in the last three diseases here considered, the aid of the skilled practitioner should be had at the first possible moment; not alone in the interest of the suffering animal, but for the safety of other members of the herd. And too much stress cannot be put on the great importance of thorough disinfection during and after the event. Carelessness in this respect is almost criminal.



intestinal canals had been dropped upon the grass. As the principal name indicates, the most common symptom is a lump on the jaw; although, indicated by another name, the tongue is often so infected and enlarged as to hang out of the mouth in a most distressing way, the sufferer unable to swallow, even breathing made difficult, and a constant dribble of saliva running down. It may, in rare cases, appear in any part of the body and the bones may be implicated, as in the case of a disease much to be dreaded.

THE COMMON ILLS AND INJURIES of the Cow are about the same as those of the horse and are treated, both in symptomatology and treatment, as treated in the matter pertaining to that animal. Colds, distempers, ordinary intestinal troubles, etc., are to be treated in much the same way. Here it will suffice to describe the best home methods for treatment of those specialized diseases above treated of.

DIARRHOEA, Scours or Dysentery, is a disease calling more for preventive than for curative methods. A clean, well ventilated barn (above all, with plenty of sunshine), where all due attention is given to correct bedding and regularity in feeding, should not harbor the scouring calf.

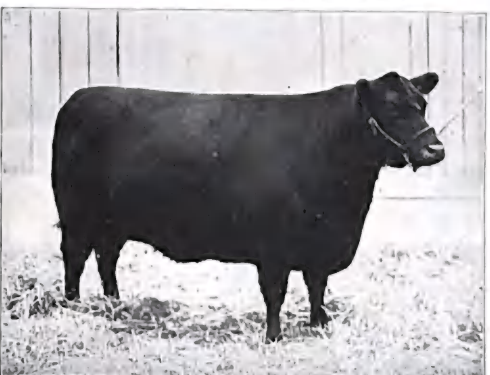
If such an one there be, it should at once be removed and be isolated until cured. Do not allow calves to be crowded in close quarters, and use plenty of lime as a purifier. Reduce the food somewhat, regulate the mother's diet, see that the feeding pails are kept well sealed; a little lime may well be added to the milk fed.

After removing the patient to a point of isolation, which must be clean, warm and dry, a half cup of boiled milk may be given, to which is added two table-spoonfuls of castor oil. A cow that has been fresh for four or five months gives the best milk for such purpose. Now this dose with another composed of a drachm each of spirits of camphor, tincture of opium, and dilute sulphuric acid; repeat as long as necessary in doses one to two hours apart. If the calf seems very weak, give a raw egg and about two ounces of whiskey beaten up in a pint of milk, as a tonic.

CONSTIPATION, also mainly a disease of calves, will be combated by prevention, this time in the case of the mother. In nutritious food, dry and unspiced, is given to its mother cow, in a fertile cause. Look after her food carefully before birth of the calf, and feed the calf under all circumstances on the first milk she



RED POLLED COW, DELPHINE

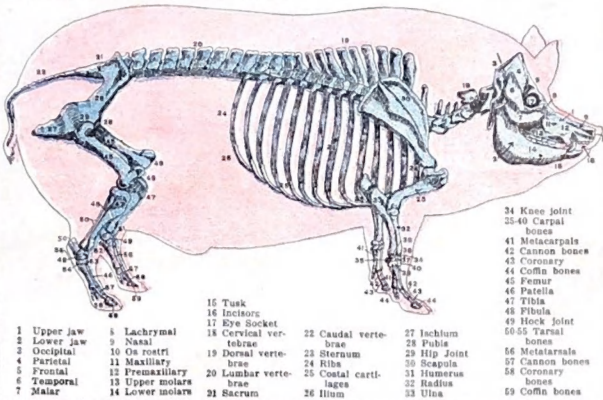


ABERDEEN ANGUS COW, VIOLET 3RD OF CANGASH

THE HOG IN HEALTH AND DISEASE

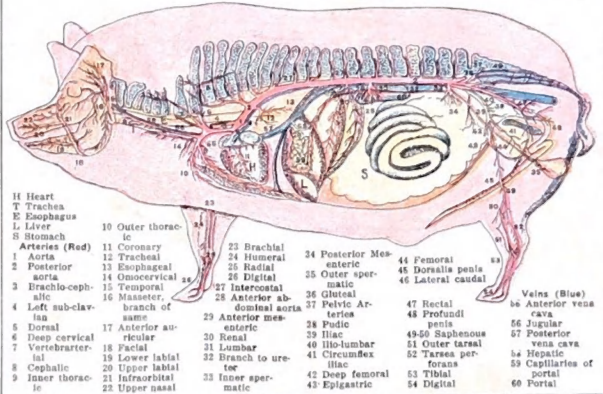
Physiology and Hygiene of the Hog

SKELETON OF THE HOG



- 1 Upper jaw
- 2 Lower jaw
- 3 Occipital
- 4 Parietal
- 5 Frontal
- 6 Temporal
- 7 Malar
- 8 Lacrymal
- 9 Nasal
- 10 Os rostri
- 11 Maxillary
- 12 Premaxillary
- 13 Upper molars
- 14 Lower molars
- 15 Tusk
- 16 Incisor
- 17 Eye socket
- 18 Cervical vertebrae
- 19 Dorsal vertebrae
- 20 Lumbar vertebrae
- 21 Sacrum
- 22 Caudal vertebrae
- 23 Sternum
- 24 Ribs
- 25 Costal cartilages
- 26 Ilium
- 27 Ischium
- 28 Pubis
- 29 Hip joint
- 30 Scapula
- 31 Humerus
- 32 Radius
- 33 Ulna
- 34 Knee joint
- 35 Carpals
- 36 Metacarpals
- 37 Cannon bone
- 38 Coronary
- 39 Coffin bones
- 40 Femur
- 41 Tibia
- 42 Fibula
- 43 Hock joint
- 44 Tarsals
- 45 Metatarsals
- 46 Cannon bones
- 47 Coronary
- 48 Radius
- 49 Ulna
- 50 Coffin bones

BLOOD SYSTEM OF THE HOG



- 1 Heart
- 2 Trachea
- 3 Esophagus
- 4 Liver
- 5 Stomach
- 6 Arteries (Red)
- 7 Aorta
- 8 Posterior aorta
- 9 Branchiocephalic
- 10 Left sub-clavian
- 11 Anterior aorta
- 12 Deep cervical
- 13 Dorsal
- 14 Deep cervical
- 15 Inner thoracic
- 16 Outer thoracic
- 17 Coronary
- 18 Tracheal
- 19 Esophageal
- 20 Omocervical
- 21 Temporal
- 22 Masseter, branch of
- 23 Brachial
- 24 Humeral
- 25 Radial
- 26 Digital
- 27 Intercoastal
- 28 Anterior abdominal aorta
- 29 Anterior mesenteric
- 30 Renal
- 31 Lumbar
- 32 Branch to ureter
- 33 Inner spermatic
- 34 Posterior mesenteric
- 35 Outer spermatic
- 36 Gluteal
- 37 Pelvic Artery
- 38 Pudic
- 39 Iliac
- 40 Ilio-lumbar
- 41 Circumflex
- 42 Tarsal perforans
- 43 Deep femoral
- 44 Epigastric
- 45 Femoral
- 46 Dorsalis penis
- 47 Lateral caudal
- 48 Profundi
- 49 Saphenous
- 50 Outer tarsal
- 51 Tarsal perforans
- 52 Tibial
- 53 Digital
- 54 Anterior vena
- 55 Jugular
- 56 Posterior vena cava
- 57 Hepatic
- 58 Capillaries of portal
- 59 Portal

Anti-dating the earliest history, friend of man before the first days of hieroglyphs and picture writing, yet the Hog has only seen his great improvement and main development within the past half century. The home of maize, Indian corn, in the Mississippi Valley, where hog-fattening is most economically carried on, is the world's greatest center of the Hog's growth and advancement.

Hogs may be divided into two classes, economically: bacon producers and lard producers. Of the former, Yorkshires and Tamworths are leaders, with sometimes Chester Whites and Berkshires; the Duroc-Jerseys, Poland-Chinas, Suffolks, Cheshires, and Essex as lard producers, with the Chester Whites and Berkshires often in this class also.

The Berkshires, Poland Chinas, Chester Whites, and Duroc-Jerseys are the four most popular breeds in this country; the first of these is of English origin, the others are of American breeding.

SELECTION OF BREEDING STOCK is of utmost importance to the breeder. Says Prof. F. D. Coburn, long famous as Secretary of the Kansas Board of Agriculture: "The burden of excellence should not be placed upon the boar alone, nor solely on the sow, and it is only by a combination of the merits from both parents that the best results are had. The sows should be roomy, broad, and maternal in appearance, while the boar ought to be more compact and well built, yet none the less robust, rugged and masculine. Selection according to type is of greater importance than selection by breed. Type has to do with the constitution, capacity, and general merit of the Hog, and, whatever the breed, there are certain points that make for a good or a poor hog, as they may be found prevailing or lacking." He then indicates the principal of these, as follows:

A short, broad, concave face, wide apart eyes, usually with an upturned muzzle, speaks of a quiet disposition and strong digestive and assimilative powers; in a word, a quick-fattening and profitable animal.

A well-rounded, prominent jaw, with short head, suggests early maturity and quick feeding.

Medium-sized ears, soft and silky, indicate

high quality and light offal; the reverse, with thin skin and coarse hair, call for flabbiness and much offal waste. The erect, foxy, pointed ear, straight face, and sharp, long nose, indicate poor fattening qualities, too much nervousness, and perhaps viciousness.

A wide, deep chest goes with robustness and ample lung room, signifying hardiness and great resistance to the pig's many ills. A slightly arched back, not too long, packed with muscles (lean meat, where the

sprawling feet, results from faulty breeding and too long continued corn diet.

TOO MUCH CORN, the same authority tells us, leads to excess of fat, not only outside the muscles, but among them, causing a lack of development in them, especially along the back. Skin, hair, and blood supply are all abnormally reduced, and the spleen, liver and kidneys are unusually small. Consequently, the bone strength is reduced quite one-half. He says: "A system of feeding which robs the hog of half

animal. It is a long since exploded belief that a hog's natural state is one of unmentionable filth and that anything unclean is good enough to feed him. Sanitary surroundings, a pen capable of quick and thorough cleaning, a balanced ration fitted to the purposes for which he is intended—breeding, bacon or lard production, and plenty of fresh air, but shelter from inclement weather when necessary, are all important contributors to the Hog's rapid, sturdy, and profitable growth.

THE COMMON DISEASES of the Hog are, as in all farm animals, those having their main origin in neglectful housing and surroundings, and in improper food or over-eating. Given fairly hygienic surroundings and a carefully studied ration, the Hog should progress with a fair proportion of success, although it must be admitted that he is the most frail of our farm animals.

HOME TREATMENT, in the absence of the veterinarian, or while he is coming, may be resorted to in a number of ailments, principal among which are: The various Worms, Mange, Scours, or Diarrhoea, Constipation, Thumps (palpitation of the heart), Quinsy, and Inflamed Udder. It is of the greatest importance, however, that the diagnosis be accurate, and too great freedom in experimental dosing should be carefully avoided, as more harm is done by incorrect diagnosis and unwise dosing, than would have resulted in rest and quiet until the expert had arrived.

While the Hog is subject to an unusual number of diseases, it is, nevertheless, a disease-resisting animal in that it usually can wait the veterinarian's arrival.

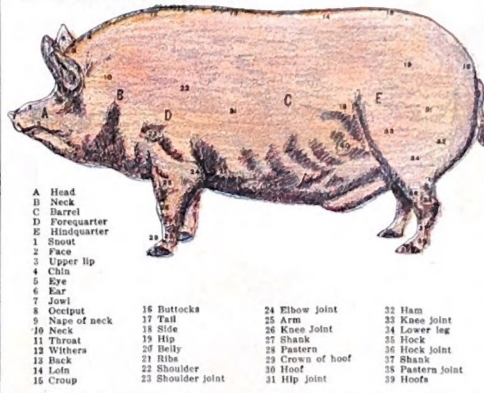
RELATIVE FOOD COST. The authority already quoted gives the following as the relative costs of corn and live weight pork:

Corn at 25 to 30 cents a bushel yields pork costing 2½ cents a pound to produce. Corn at 35 to 40 cents a bushel yields pork costing 4 cents a pound to produce. Corn at 40 cents a bushel yields pork costing 5 cents a pound to produce.

On the assumption that the net weight of hogs is 20 per cent (1-5) less than that of the live weight; or the live weight a 22 per cent (1-4) more than the net, the following is a fair rule:

To ascertain the net weight multiply the gross weight by .8; to find the gross weight divide by .8.

EXTERIOR OF THE HOG



- A Head
- B Neck
- C Barrel
- D Forequarter
- E Hindquarter
- 1 Snout
- 2 Face
- 3 Upper lip
- 4 Chin
- 5 Eye
- 6 Ear
- 7 Jaw
- 8 Occiput
- 9 Nape of neck
- 10 Neck
- 11 Throat
- 12 Withers
- 13 Back
- 14 Loin
- 15 Croup
- 16 Buttocks
- 17 Tail
- 18 Side
- 19 Hip
- 20 Belly
- 21 Ribs
- 22 Shoulder joint
- 23 Elbow joint
- 24 Arm
- 25 Foreleg
- 26 Knee joint
- 27 Shank
- 28 Pastern
- 29 Crown of hoof
- 30 Hoof
- 31 Hip joint
- 32 Ham
- 33 Knee joint
- 34 Lower leg
- 35 Hock joint
- 36 Shank
- 37 Hoof
- 38 Hoof
- 39 Hoof

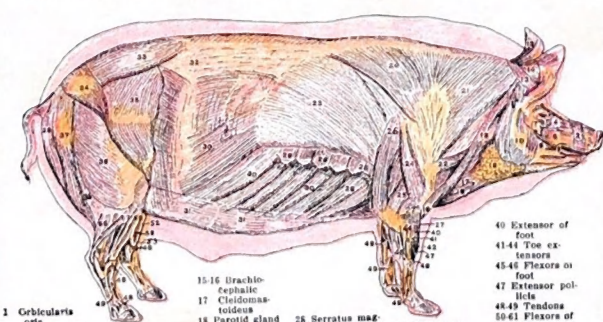
tenderloin is) tells of strength and added weight. If the rump is level, without much slant, the thighs fleshy full and firm, well-spread toward the hocks, a large ham is indicated; an important matter to both grower and butcher. Sides long and deep and an even underline signify good weight, a high-quality of bacon, if not too fat, or ample "sildemeat" if fat.

Short, stocky legs belong to the pig with deep sides and indicate general character and constitution. Weakness in them, with

its blood and half the normal strength of the bones, and produces other violent changes is a most unnatural one and must, if persisted in, end in giving us a race of animals unsatisfactory to all concerned. From parents thus weakened must come descendants that will fall easy victims to disease. Nor is this all; the meat can hardly be of satisfactory composition and flavor."

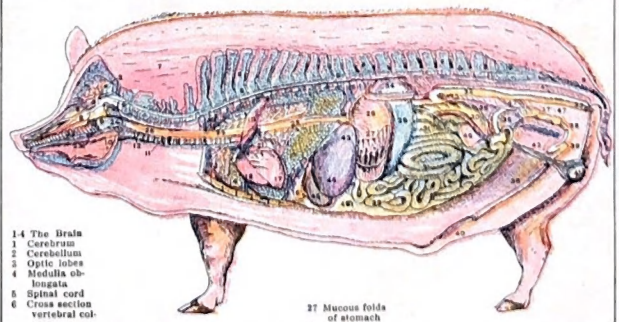
CARE AND FEEDING are of just as much importance to the Hog as to any farm

MUSCLES OF THE HOG

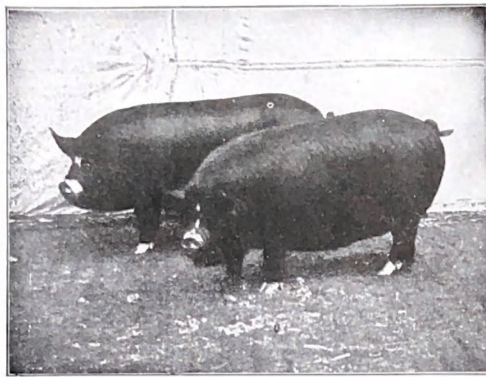


- 1 Orbicularis oris
- 2 Levator nasolabialis
- 3 Zygomatico-pulvibrum
- 4 Pyramidal mental
- 5 Depressor of the lip
- 6 Levator labii propus
- 7 Buccinator
- 8 Orbicularis palpebrarum
- 9 Buccal
- 10 Masseter
- 11 Parotid
- 12-14 Neck muscles of ear
- 15-16 Brachiocephalic
- 17 Cleidomastoides
- 18 Parotid gland
- 19 Sternohyoid
- 20-22 Trapezius
- 23 Latissimus dorsi
- 24 Deltoid
- 25-26 Forearm extensors
- 27 Extensor of foot
- 28 Serratus magnus
- 29 Sternohomomeral
- 30 Outer oblique abdominal
- 31 Rectus abdominis
- 32 Lumbodorsal fascia
- 33 Gluteus
- 34 Gluteus
- 35 Thigh extensor
- 36 Semitendinosus
- 37 Semimembranosus
- 38 Flexor medialis
- 39 Superficial gluteal
- 40 Extensor of foot
- 41-44 Toe extensors
- 45-46 Flexors of foot
- 47 Extensor pollicis
- 48-49 Tendons
- 50-51 Flexors of foot
- 52 Peroneus
- 53 Extensor of third toe
- 54 Extensor of fourth toe
- 55 Flexor medialis
- 56-58 Muscles of lower leg

INTERNAL ORGANS OF THE HOG



- 1 The Brain
- 2 Cerebrum
- 3 Cerebellum
- 4 Optic lobes
- 5 Spinal cord
- 6 Cross section vertebral column
- 7 Ligamentum nuchae
- 8 Turbinate bones
- 9 Pharynx
- 10 Larynx
- 11 Trachea
- 12 Thyroid gland
- 13 Aorta
- 14 Branchi nuchae
- 15 Right lung
- 16 Pleura
- 17 Left ventricle
- 18 Right ventricle
- 19 Aorta
- 20 Pulmonary artery
- 21 Aorta
- 22 Mouth
- 23 Trachea
- 24 Pharynx
- 25 Esophagus
- 26 Stomach
- 27 Mucous folds of stomach
- 28 Spleen
- 29 Small intestine
- 30 Cecum
- 31 Colon
- 32 Rectum
- 33 Anus
- 34 Left Kidney
- 35 Ureter
- 36 Bladder
- 37 Prostate gland
- 38 Penis
- 39 Sigmoid flexure of same
- 40 Gland of same
- 41 Testicles
- 42 Vas deferens
- 43 Liver
- 44 Left lobe of same
- 45 Right lobe of same
- 46 Abdominal cavity
- 47 Pelvic cavity



BERKSHIRE PIGS, winners at the Smithfield Show, England

SYMPTOMS OF DISEASES OF THE HOG, or of such diseases as may safely be left to home treatment, or may be temporarily relieved while the veterinarian is on his way, may be briefly outlined as follows:

INTESTINAL DISEASES are such as Scours, or Diarrhoea, Constipation, Hog Cholera, Swine Plague, and the various worms. The symptoms of Constipation, whether in domestic animals or in man, are too well known to call for enumeration here. Suffice it to say that tight bowels are more apt to afflict the Hog during the winter and that they should be promptly relieved, as they prevent proper feeding, the assimilation of food and, as a consequence, the normal rate of putting on flesh, for which the hog is being raised.

SCOURS, or Diarrhoea, caused most frequently by stale milk or spoiled buttermilk, a damp pen or bed, by changing the pen in such a way that a chill resulted, or from the filth of a wallow, should be promptly stopped. It is very weakening and reduces the Hog to a condition where it is ripe for other diseases. The symptoms, those of loose bowels and thin watery discharges, are too well known to call for enumeration here.

THE WORMS common to the Hog are the Pin Worm, Round Worm, and the Thorn-Headed Worm. The first of these is a minute creature, barely $\frac{1}{2}$ inch in length, white in color, the almost microscopic eggs of which are deposited on the grass, and thence, or from running streams into which they are washed, are taken into the Hog's stomach. Itching at the root of the tail is the usual symptom, as they are closely related to the "seat worm" of humans. While not usually serious enough to cause ill health, they cause great annoyance and nervousness, and in that way may interfere with nutrition and fattening. The Round Worm, also, is not usually productive of serious consequences, although at times, where present in considerable numbers, it may cause distressing nervous symptoms and even result in fits. Colicky pains, loss of flesh, great restlessness, dry skin with marked loss of hair are prominent symptoms. Morbid appetite is also often to be observed. The Thorn-Headed Worm, on the contrary, because of its size (sometimes reaching 2 feet in length) and great voracity—is the equal of our tape worm, causing its victim to have a voracious appetite, although the addition of flesh seems impossible, great weakness follows, especially in the joints, the eyes become inflamed and are much swollen in the corners. In this state the Hog soon becomes irritable and even, at times, dangerous, because of the nervous strain.

DRENCHING THE HOG is at times necessary and permanent arrangements should be provided so that it can be done promptly whenever called for. Provide a small pen into which the drove, or a part of them, can be driven so that they will be crowded closely together without room for much moving about. Have ready a noose of stout $\frac{1}{2}$ -inch rope (mash cord is good) and engage it around the animal's upper jaw, well back toward the juncture of the lips; then draw it taut, throw back the hog's head and quickly administer the medicine with a syringe. Do not use a glass syringe; use one of metal. In its frantic struggles the animal is apt to break a glass syringe and, swallowing bits of the glass, die from the effects. Where a hog is heavy, strong and unruly, it is well to be provided with a pulley and stretcher, hung conveniently over the pen. With this, by the same noose method, the hog can be elevated almost off its front feet and in that position the most bulky or obnoxious medicine may be administered. Wait until the hog's most frantic efforts have ceased.

UDDER INFLAMMATION, often called Garget, sometimes follows a difficult birth of a large litter; or it may be caused by milk accumulation due to some of the young litter having died. It is also attributed to germ infections, by some. Such inflammation, frequently very observable, should be watched for very carefully and be taken in hand at once.

QUINSY, a form of sore throat, at times a sort of ton-

sillitis, is usually characterized by difficult breathing, disinclination to feed, a swollen, hot throat, etc. It is not to be trifled with, as it is often a stepping stone to more serious consequences.

THUMPS is the very characteristic name for palpitation of the heart in the Hog. Said to be due to insufficiency of nitrogen in the food, it is often attributable to too great a ration of corn. The name sufficiently describes the symptoms, the hog's throbbing being very easily perceptible. It should be relieved promptly.

MANGE, another of the diseases of parasitic origin, is too well known in most of the domestic animals to call for description here. Attacking the integrity of the skin, burrowing under it, causing scabs, intense itching and violent scratching, these minute parasites soon produce raw, running sores that follow another word or warning being uttered. Appetite falls, nervous energy is exhausted, and the victim falls away rapidly. With a penetrating lense of very moderate power the tiny parasites are easily seen. In this way the disease may be instantly separated from eczema, or any like disease.

HOG CHOLERA is a very Plague, are sometimes only indicated in the first stages by fever, accompanied by swelling of the tongue and throat. In the postmortem examination button shaped ulcers may be found in the large intestine. Cheese-like collections in the inflamed lungs indicate the probability of Swine Plague being the disease. These are most seriously threatening diseases to be checked and stamped out at once and with the most heroic measures. The veterinarian should be had on the scene at the earliest possible moment.

TUBERCULOSIS in the Hog is closely related in its manifestations to the disease in mankind. Usually it is only detected in the carcass, although at times swellings, notably in the glands of the neck and in the joints, accompanied by a decided diarrhoea, with occasional loss of weight, are to be observed.

SIMPLE HOME REMEDIES for the treatment of the Hog, or for his relief until skilled aid has arrived, here follow another word or warning being first uttered regarding the very great importance of correct diagnosis, before the powerful medicines are administered.

CONSTIPATION is a very common ailment, innumerable remedies; there are many excellent proprietary articles on the market for the purpose. Bran mash con-



POLAND-CHINA SOW, winner of many State Fair Prizes

an empty stomach. Perhaps santonine, of all the above, is most to be recommended.

HOG CHOLERA, while calling for the veterinarian, may be treated temporarily thus: thoroughly pulverize and mix one ounce each of wood charcoal, sulphur, sodium sulphate and antimony sulphide, with two ounces each of the chloride, bicarbonate, and hyposulphite of sodium. Of this a large tablespoonful should be given for every 200 pounds of the hog's weight, once daily. Once a day give bran and middlings, cornmeal, ground oats, crushed wheat, or other soft feed mixed with hot water, into which the above medicine should be stirred; do not feed corn alone.

TUBERCULOSIS is not curable in swine. Animals should be killed as soon as the diagnosis is made and the carcass should be destroyed effectually.

MANGE can usually be cured by steeping one part of tobacco in twenty parts of boiling water for several hours; clean the affected parts well and then apply this wash with a sponge. Perhaps better is two ounces of kerosene seed in three pints of water, boil one hour and let steep (nearly boiling) for an hour longer. Rubbed into the sore areas this kills both the parasite and its eggs.

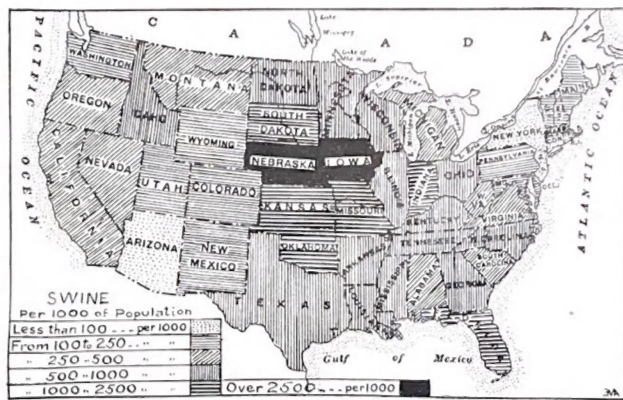
THUMPS, palpitation, is best met by plenty of fresh air and sunshine and a sufficiency of exercise. In the young pigs, the mother's milk-producing ration should be temporarily decreased. Keep the quarters clean.

QUINSY. A $\frac{1}{2}$ drachm of chloride of ammonia in a half pint of water, given twice daily, is an excellent remedy. Give in the drinking water, if the pig will take it; let it have ample clean water to drink at all times. Camphorated liniment rubbed into the neck of the animal. Three drops of fluid extract of belladonna with ten grains of chloride of potassium, three daily, will relieve difficult breathing.

SORE MOUTH. A form of mouth inflammation, not of any infectious nature, is sometimes observed in pigs, which have been allowed to wallow in very filthy places, and this is especially so if they have been allowed sour and decomposing food. Saliva dripping from the corners of the mouth and the hog champing its teeth, are unmistakable symptoms. There seems to be call for no other treatment than consists in reforming the food supply, which should be of the most cleanly nature, together with an abundance of pure water.

LOSS OF APPETITE. Hogs are usually known to be very voracious feeders; but they sometimes lose appetite because of the long-continued use of the same ration without sufficient variety. Thus, corn without other grain occasionally becomes very distasteful to them, and they refuse to eat it. This can almost invariably be remedied by a change of diet and the feeding of a ration of very considerable variety and frequent changes. Sometimes a tonic (milk and egg with a little whiskey) is desirable.

POISONING. A common form of poisoning in hogs that are raised near a city or town, is due to feeding swill from hotels or large boarding houses, where the dishes are washed with washing powder, or some highly alkaline, irritating soap. The leading symptoms are fever, diarrhoea, occasional vomiting and even partial paralysis. In this the rate of mortality is high, and not infrequently the trouble is mistaken for hog cholera. Investigation should be had at once. There are also several plants comparatively rare, although hogs are commonly thought to be omnivorous feeders, exercising little care in the selection of their food. Cottonseed meal, if fed in large quantities and for long periods has also resulted in serious poisoning. The young cocklebur is known at times to have a poisonous effect. It is doubtful whether there is any actual poisonous principle in the plant; the irritation is thought to be from eating the young burrs. In all such cases of poisoning, the hog should be drenched, a tonic administered and it should be kept a few days in a clean pen and fed most carefully on the best of food and be amply supplied with the purest of water.

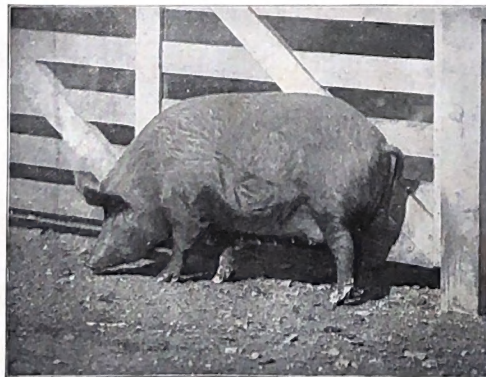


taining sulphur, or some one of the laxative salts, are favored by many. An injection of warm soapuds is excellent in stubborn cases; soft soap may be given with the feed, though some hogs will refuse food so treated. It is, however, far better to study the diet and alter the food accordingly, thus aiming at the cause and not at the symptom. Apples, most of the root crops, and pumpkins are as a rule sufficiently corrective and will bring the creature back to its normal condition of easy and frequent passages.

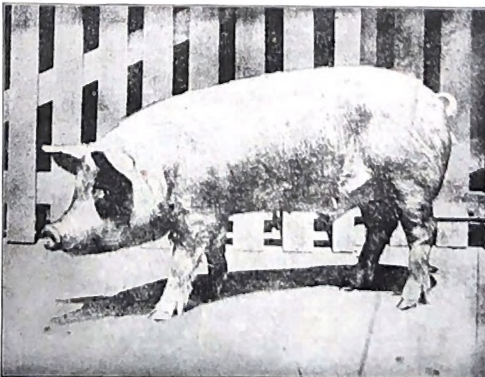
DIARRHOEA, or Scours, calls for immediate attention, especially when it appears among the young pigs. Dry quarters are a first essential; at any rate the litter should at once be moved from the present pen. Sulphur, in daily doses of a tablespoonful to each sow, kept up for three to five days is favored by many. White oak bark tea, very strong and given in pint doses twice daily in the slop is also excellent; so is, also, several slabs of black walnut bark soaked in the swill barrel for ten to twelve hours. If necessary, repeat these treatments in three or four days; diarrhoea should be promptly stamped out.

WORMS. Although usually eating in the most ravenous fashion the hog attacked by worms remains thin and scrawny, and is usually weak and feverish. In case of the latter, quinine in two to four grain doses, should be given three times daily. Weakness may be overcome by a stimulant of whiskey and eggs, or cod liver oil in place of the eggs. As a rule, however, removal of the worms will have a sufficiently stimulating effect. For the Pin Worm, or seat worm, injections of quite warm water, followed by an infusion of quassia is excellent. The latter is made by infusing two ounces of quassia chips in a pint of boiling water, using it as an injection when cool. A good strong purge, such as below described will often aid in ejecting some of these worms.

For both the Round Worm and the Thorn-Headed Worm an excellent one consists of a half ounce of fluid extract of nuxvomica and senna at a dose, continued every four hours until purging results. Santonine is an extremely powerful vermifuge; administer it in pills of four grains each. Wormed oil (chenopodium) is very highly esteemed by some, in from twenty to thirty drops in syrup; each of these remedies should be followed in two hours by a strong purge, as above, and all should be administered on



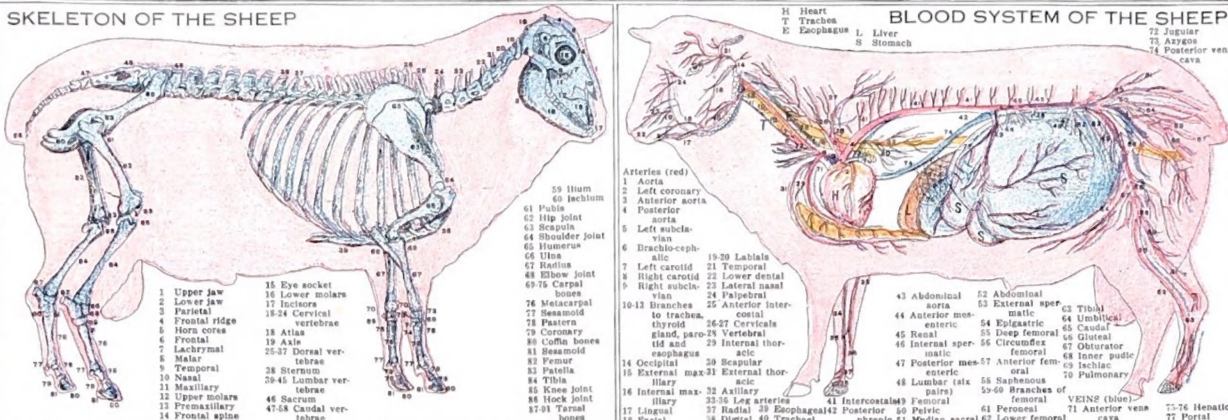
TAMWORTH SOW, KATY BELL, Iowa State College



Packer Ideal Model of a Bacon Hog

Physiology and Hygiene of the Sheep

BLOOD SYSTEM OF THE SHEEP



In our country the best-known and most-valued breeds are the Merinos, of the fine-wooled class, the Southdowns, Hampshire, Shropshires, Dorsets, Oxford and Cheviots, of the medium-wooled breeds, and Cotswolds, Lincolns, and Leicesters, of the long or coarse-wooled sheep. There are more Merinos raised in the United States than of all other breeds combined; they numbered about 75 per cent. at the last census.

In food, access to pure water for the sheep and a certain degree of moisture for their pasture, when living out, seem to be all that is required. The sheep is better able to choose his food wisely, when on range, than most of his domestic relatives.

Sheep are only excelled by hogs in their ability to produce meat from a given quantity of food, and are superior to them in the utilization of coarse fodders and bulky food, even excelling cattle in this respect. The usual estimate of average is that it calls for 9 to 11 pounds of dry matter to add a pound of weight with steers, while the same will be produced in sheep by 7 to 8 pounds of the same food—most important—while the sheep is excelling in this way he will grow a fleece worth from \$1.00 to \$2.00 per head.

GROWING FOR WOOL ALONE cannot be profitably conducted on high-priced agricultural lands, if wool is selling at 25 cents a pound, or less. Under western range condition and in large flocks, where one man can handle from 2,000 to 4,000 sheep, there is a possibility of considerable profit for wool alone; but even there

HOTHOUSE LAMBS, probably the most profitable class in the sheep industry, are fat lambs weighing from 40 to 60 pounds, marketed between Christmas and the

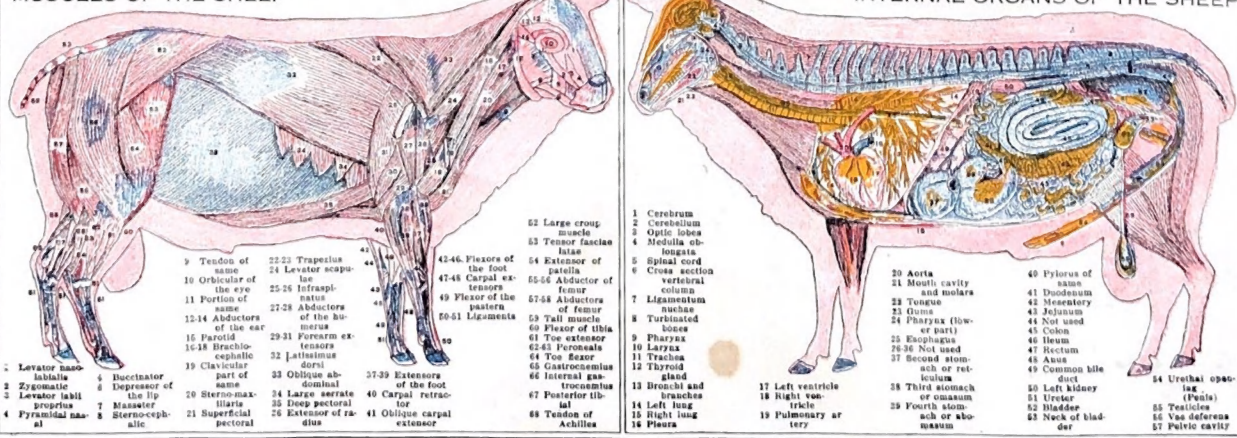
29
30
31
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34
35
36
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38
39

27 Knee	44 Lip joint
28 Shank	45 Knee joint
29 Pastern joint	46 Leg or leg
40 Pastern	47 Hock joint
41 Crown of hoof	48 Hock

1 Occiput
2 Horn ridge
3 Horn knob
4 Ear
5 Forehead
6 Bridge of nose
7 Nostrils
8 Mouth and lips
9 Chin
10 Mandibular space
11 Cheek
12 Eye
13 Tear groove
14 Neck of neck
15 Crest of neck
16 Neck
17 Dewlap
18 Withers
19 Back
20 Loin
21 Fore breast
22 Lower breast
23 Ribs
24 Plank
25 Hollow of flank
26 Shoulder
27 Scapula
28 Sacrum
29 Croup
30 Tail
31 Scrotum
32 Sheath
33 Shoulder
34 Shoulder joint
35 Fore arm
36 Elbow
37 Knee
38 Shank
39 Pastern
40 Pastern
41 Crown of hoof
42 Hoof
43 Upper part of leg
44 Hip joint
45 Knee joint
46 Lower leg
47 Hoof joint
48 Hoof

-
- Figure 1 consists of two detailed anatomical drawings of a male black fly, *Simulium vittatum*. The left drawing is a lateral view of the head and thorax, showing the eye, antenna, mouthparts, and wing. The right drawing is a ventral view of the head and thorax, showing the underside of the head, the base of the wing, and the genitalia. Both drawings are labeled with numbers corresponding to the list of parts provided. A scale bar is located at the top right of the ventral view.
- | Number | Part |
|--------|------------------|
| 1 | Occiput |
| 2 | Horn ridge |
| 3 | Horn knob |
| 4 | Par |
| 5 | Purched |
| 6 | Bridge of nose |
| 7 | Nostril |
| 8 | Mouth and |
| 9 | lip |
| 10 | Mandibular space |
| 11 | Cherk |
| 12 | Eye |
| 13 | Par groove |
| 14 | Nape of neck |
| 15 | Crest of aek |
| 16 | Hoof |
| 17 | Twolap |
| 18 | Withers |
| 19 | Back |
| 20 | Lozin |
| 21 | Breast wall |
| 22 | Fore breast |
| 23 | Lower breast |
| 24 | Dolly |
| 25 | Plank |
| 26 | Hoof |
| 27 | Hip |
| 28 | Butrum |
| 29 | Croup |
| 30 | Tail |
| 31 | Scrotum |
| 32 | Sheath |
| 33 | Shoulder joint |
| 34 | Shoulder joint |
| 35 | Pure arm |
| 36 | Elbow |
| 37 | Knee |
| 38 | Shank |
| 39 | Patern joint |
| 40 | Patern joint |
| 41 | Crown of hoof |
| 42 | Hoof |
| 43 | Upper part of |
| 44 | Hip joint |
| 45 | Knee joint |
| 46 | Lower leg |
| 47 | Hoof joint |
| 48 | Hoof |

INTERNAL ORGANS OF THE SHEEP





A Famous Prize Winning LINCOLN RAM

DISEASE SYMPTOMS of the Sheep are not as common as in the other domestic animals; while, perhaps, the sheep is subject to as many different diseases as the other animals, these occur less frequently and it appears to be a sturdier creature than the other farm denizens. In the frequency of their appearance the leading symptoms seem to be those of the

PARASITIC DISEASES. Principal among these are the various Worms, Lice, Scab, Wool Balls, and Anthrax. With the exception of the last named these diseases are more or less amenable to home remedies.

WORMS are of three principal sorts: (1) The Stomach Worm, a thread-like worm, about an inch long, found in the sheep's fourth stomach, most frequently in young lambs. Colicky pains are a chief symptom; (2) the Tapeworm, causing an abnormally great appetite while the flesh continues to waste away; and (3) the Grub Worm, the larva of the gadfly, causing extreme giddiness, from which Gid, the secondary name is derived.

SCAB AND LICE cause much the same symptoms, inordinate scratching and even biting of the infected areas. Scab usually appears first on one side or the other, but quickly spreads over the entire body, if not immediately conquered. It is a contagious disease and is universal. These skin irritations cause the sheep to bite at the infected areas and in that way wool is carried to the stomach—hence **WOOL BALLS.**

ANTHRAX, the immediate and very dangerous nature of which has been thoroughly discussed elsewhere, calls for the early arrival of the veterinarian. It is perhaps as well to anticipate his almost invariable verdict and kill the sheep and thoroughly destroy its carcass. Remember that Anthrax is communicable to man and greatly to be dreaded. Stamp it out!

DIGESTIVE TROUBLES in the sheep are mainly Constipation, Diarrhoea or Scour, Thrush, Bloat, and Colic. The first two of these have been sufficiently discussed elsewhere in these columns. Their symptoms are practically the same as in man.

THRUSH, due to the derangement of the mother's digestive processes, appears in the mouth of the lamb, which refuses to eat and is greatly salivated.

BLOAT is easily diagnosed by the state made plain by the name, the body appearing to be out of all proportion to the legs.

COLIC AND STRETCHES cause the sufferer to lie down. In Colic it grinds its teeth; this is often mistaken at first for the Stretches, which causes the sheep to extend itself, when down, to the greatest possible length. Both have been mistaken for yeasting, the pangs of birth. Colic should be diagnosed early and be quickly relieved.

NEGLECT DISEASES may be enumerated as Foot Rot or Foot Scald, Caked Udder, and Inflammation of Eyes. Limping and soreness in the clefts of the feet are the symptoms of Foot Rot; unclean runs and neglect

in foot-trimming are the prime causes. Neglect of the ewe at weaning time causes Caked Udder, whose name sufficiently describes the symptoms of the disease. Related to it is Garget, a knotty congested condition of the udder, usually due to a cold or chilling. Faulty sight, sometimes resulting in total blindness is caused often by exposure to severe weather, but more frequently is due to a faulty construction or location of the barn.

MINOR DISEASES, so far as frequency is concerned, are Tumors, a manifestation of tuberculosis; Gout, a swelling of the neck glands, usually deadly; and Urinary derangements, usually in the ram, whose water is stopped, and generally due to an over supply of nitrogenous food. These all should call for the prompt intervention of veterinary skill.

USEFUL HOME TREATMENTS of the foregoing diseases are here described, it being premised that correct diagnosis is of the utmost importance.

The wrong diagnosis may call for a remedy utterly unsuited, perhaps radically hurtful, to the true disease. This is always the main danger in home remedies and methods, as should constantly be remembered.

PARASITIC DISEASES, already described, are of two classes, internal parasites, Worms, and external, the ticks, lice, etc. For the first class, the Worms, santonine is especially to be recommended. In doses of from two to four grains administered on an empty stomach and followed by an active purge, it is usually entirely effective. For the Stomach Worm, the veteches are recommended as a preventative. Flour, honey, and powdered tin in equal quantities, made into a three or four drachm pellet, given on an empty stomach and followed by an active purge, is generally effective with these worms. For the Grub Worm a sovereign remedy is to bore some augur



MERINO RAM, DON ALFONSO, Champion at N. Y. State Fair

ly with twelve drachms of prepared chalk. One dose is usually sufficient; keep sheep for awhile on dry rations of a poor nature.

COLIC AND STRETCHES. The similarity of symptoms in these diseases has already been alluded to. If not very soon relieved colic is apt to lead to severe inflammation and to death. A drop of laudanum with one drachm of powdered ginger, taken in a little flaxseed tea usually produces prompt relief. In the case of Stretches the prevention is the true line of treatment. This can usually be procured by the abundant feeding of roots, which are always to be recommended under all circumstances. For the throes of the attack, however, melted lard, in one-fourth-pound doses, will be found to be a reliable remedy.

TUMORS. The sheep with a decided tumor, tuberculosis, had better be killed and burned.

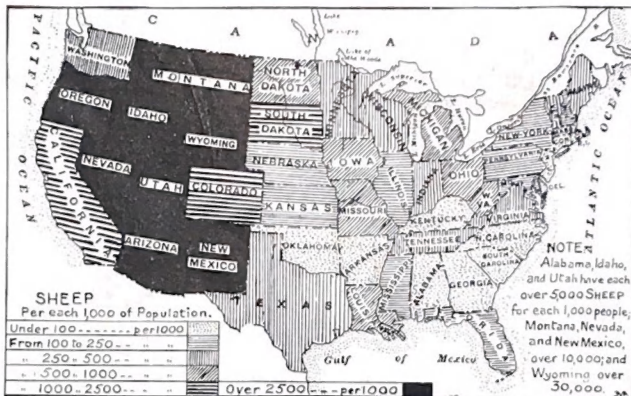
GOITRE. In adults, cut into the growth heroically and, when bleeding stops, inject a small syringe full of tincture of iodine, two-thirds strength. Where Goitre appears in the young lamb it is usually quite incurable and it is best to kill the little sufferer.

CAKED UDDER, Sore Teats and Garget. In Caked Udder the ewe should be sheltered during treatment. Mix turpentine into lard to the consistency of cream and, after bathing the udder in hot water, rub the mixture gently but thoroughly into the inflamed parts. Sore Teats, usually due to the lambs eagerly biting them, can best be relieved by applications, three or four times daily, of equal parts of olive oil and glycerine. Garget should be very promptly relieved. Bathe the udder with hot water in which is dissolved an ounce of baking soda. Then dry the udder with a soft cloth and rub in thoroughly either camphorated oil, or lard and turpentine, as above described.

EYE INFLAMMATION calls for immediate and thorough washing of the eye with some good eye lotion, of which your druggist can recommend several. Then, the veterinarian should be sent for, or blindness is quite likely to ensue.

BLOAT should be tapped as early in the trouble as possible. A common knife may be used, but a trocar is better and one should be kept on hand. Whatever the instrument, it should be scrupulously clean and be sterilized by passing several times through a candle's flame. Take care not to strike a kidney; study our plates. After tapping, sterilize the wound with peroxide of hydrogen and cover with adhesive plaster. Then give a heavy dose of raw linseed oil, followed in one hour by a dose consisting of three drachms of hyposulphite of soda and one drachm of powdered ginger, mixed in water.

FOOT ROT, or Scald, should be first treated with the knife; cut away all dead or proud parts; then drive the sufferer slowly through a trough in which is a dilute of carbolic acid, or blue vitriol. Ask an expert as to solution and remember that it is a dangerous compound.



holes in a log, fill them with salt and cover over with tar; in their eager attempts to obtain the salt, the sheep get the tar on their noses, from whence it is soon transferred to the stomach; tar is a most effective remedy for the grubworm. For Tapeworm, use santonine, as above described, or, also highly praised, let the animal fast for at least 15 hours, a whole day is better; then administer an injection of warm water and quickly follow up with a drachm of oil of male fern in two ounces of castor oil.

SCAB AND LICE. Both of these call urgently for dipping; no other course holds out any real promise of cure. There are a number of excellent proprietary dips on the market. "Krosol" is a highly recommended dip for Lice. For Scab at least three dippings will be necessary and all feed racks, troughs, mangers, stalls, fences, etc., should be most thoroughly disinfected. Intervals of from ten days to two weeks should be between the dippings.

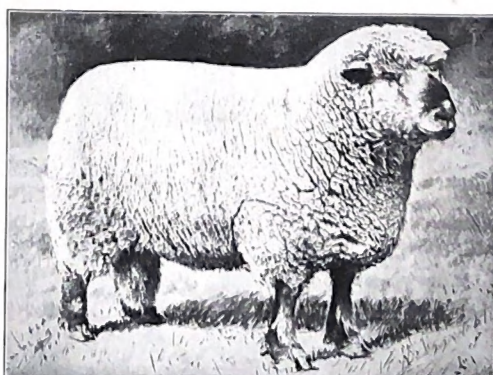
WOOL BALLS, rarely cured, is related in cause to the above, as elsewhere described. Raw linseed oil is sometimes found to be palliative in this trouble.

ANTHRAX or Malignant Pustule, is incurable and is exceedingly communicable, even man being in danger. Kill the animal promptly and burn or destroy with quicklime, burying deeply.

DIGESTIVE TROUBLES nearly all call for the study of dietaries and a change in most instances. In Constipation the root crops and oil cake will prove to be corrective. Soapy injections, or of raw linseed oil, followed by a good dose of castor oil will usually not need to be repeated, if the feed is looked after. In Diarrhoea, on the other hand, the castor oil should precede a dose consisting of one drachm each of powdered ginger and laudanum, mixed thorough-



SHROPSHIRE RAM, RINGLEADER, a frequent Prizewinner



OXFORD RAM, undefeated at many shows